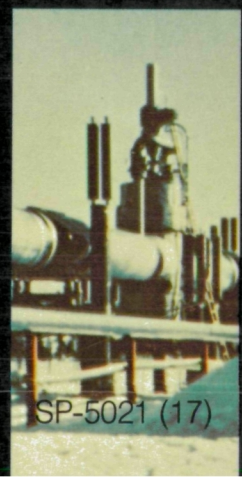
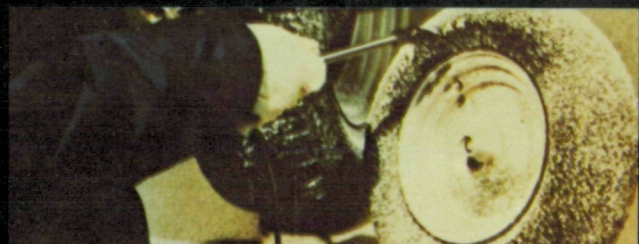


NASA Tech Briefs Index 1976

National
Aeronautics and
Space
Administration



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INTRODUCTION

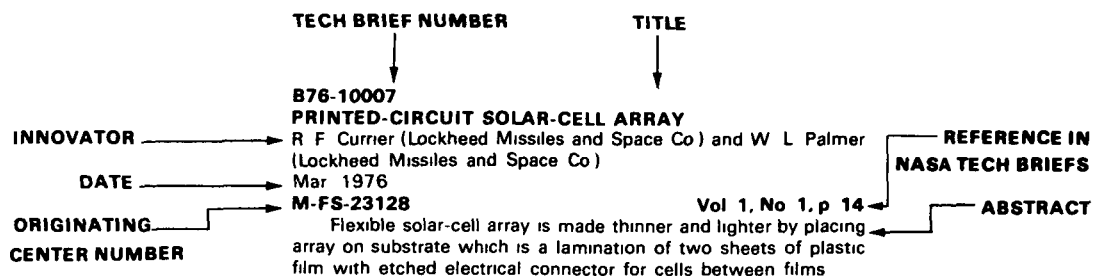
Tech Briefs are short announcements of new technology derived from the research and development activities of the National Aeronautics and Space Administration. These briefs emphasize information considered likely to be transferrable across industrial, regional, or disciplinary lines and are issued to encourage commercial application.

This *Index to NASA Tech Briefs* contains abstracts and four indexes -- subject, personal author, originating Center, and Tech Brief number -- for 1976 Tech Briefs.

Abstract Section

The abstract section is divided into nine categories: Electronic Components and Circuits; Electronic Systems, Physical Sciences; Materials; Life Sciences; Mechanics; Machinery; Fabrication Technology; and Mathematics and Information Sciences. Within each category, abstracts are arranged sequentially by Tech Brief number.

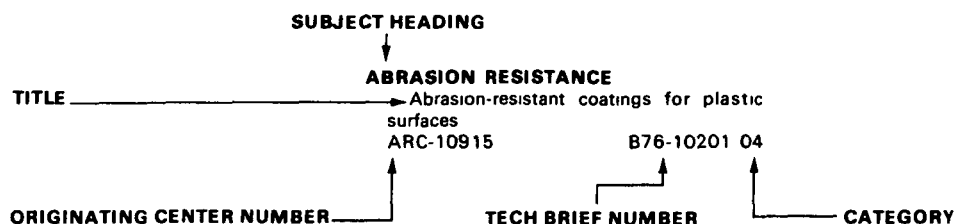
A typical abstract entry has these elements:



The originating Center number in each entry includes an alphabetical prefix that identifies the NASA Center where the Tech Brief originated. A list of prefixes and the corresponding Center names are given on page iii.

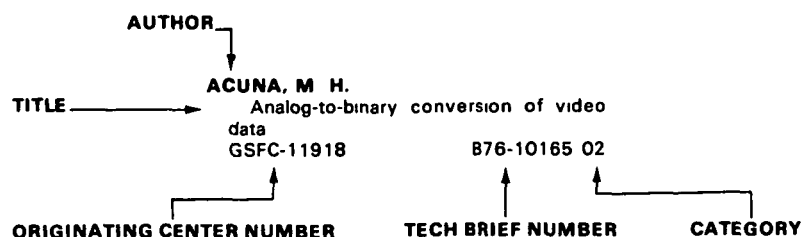
Indexes

Four indexes are provided. The first is a subject index, arranged alphabetically by subject heading. Each entry in the subject index includes a Tech Brief number and a category number to aid the user in locating pertinent entries in the abstract section.



The January 1976 edition of the *NASA Thesaurus* (NASA SP-7050) is used as the authority for the indexing vocabulary that appears in the subject index. The *NASA Thesaurus* should be consulted in examining the current indexing vocabulary, including associated cross-reference structure. Only the subject terms that have been selected to describe the documents abstracted in this issue appear in the subject index. Copies of the *NASA Thesaurus* may be obtained from the National Technical Information Service or the U.S. Government Printing Office at \$23.50 for the two-volume set.

The second index is a personal author index. Entries in this index are arranged alphabetically by author's name. Tech Brief and category numbers are supplied to help the user find the appropriate entries in the abstract section.



The third index relates each originating Center number to the corresponding Tech Brief number and category. Entries in this index are arranged in alphanumeric order by Center number.



The fourth index relates each Tech Brief number to its originating Center number. Entries are arranged in ascending Tech Brief number order.



Originating Center Prefixes

ARC	Ames Research Center
GSFC	Goddard Space Flight Center
HQ	NASA Headquarters
KSC	Kennedy Space Center
LANGLEY	Langley Research Center
LEWIS	Lewis Research Center
M-FS	Marshall Space Flight Center
MSC	Johnson Space Center (formerly Manned Spacecraft Center)
NPO	Jet Propulsion Laboratory/NASA Pasadena Office

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TABLE OF CONTENTS

Abstract Section

Category 01	Electronic Components and Circuits ...	1
02	Electronic Systems	8
03	Physical Sciences	11
04	Materials	19
05	Life Sciences	23
06	Mechanics	26
07	Machinery	34
08	Fabrication Technology	38
09	Mathematics and Information Sciences	42

Indexes

Subject	I-1
Personal Author	I-51
Originating Center/Tech Brief Number	I-67
Tech Brief/Originating Center Number	I-71



Index to NASA Tech Briefs

February 1977

Abstract Section

01 ELECTRONIC COMPONENTS AND CIRCUITS

B76-10001

PLUG-IN LIGHT SWITCHES

E J Stringer (Rockwell Intern Corp)

Mar 1976

M-FS-24183

Vol 1, No 1, p 9

New concept in electrical hardware for buildings is safer, less expensive to manufacture, and easier to install than conventional wall receptacles

B76-10002

DIP EXTRACTOR SIMPLIFIES CIRCUIT REMOVAL

T Nies (Honeywell Inc)

Mar 1976

MSC-12712

Vol 1, No 1, p 10

Easily constructed tool can be used to pull dual in-line packaged integrated circuits off printed-wiring boards without damaging pins. Extractor can be designed for most popular IC configurations and sizes

B76-10003

SUPERCONDUCTIVE NEURISTOR R-JUNCTION

S A Reible (Wisconsin Univ)

Mar 1976

HQN-10871

Vol 1, No 1, p 11

Device incorporating specially-configured pure metal transition region can be developed to simulate a nerve cell. Combination of such cells may be formed to simulate an eye or brain and can be used in recognizing characters and other visual images

B76-10004

ECONOMICAL CUSTOM LSI ARRAYS

A Feller (RCA), A Smith (RCA), P Ramondetta (RCA), R Noto (RCA), and T Lombardi (RCA)

Mar 1976

M-FS-23262

Vol 1, No 1, p 12

Automatic design technique uses standard circuit cells for producing large-scale integrated arrays. Computerized fabrication process provides individual cells of high density and efficiency, quick turnaround time, low cost, and ease of corrections for changes and errors

B76-10005

ULTRA-HIGH-VACUUM ELECTRICAL FEEDTHROUGH

J R Gavalier (Westinghouse Elec Corp) and M A Janocko (Westinghouse Elec Corp)

Mar 1976

HQN-10799

Vol 1, No 1, p 13

Device for cathodic sputtering utilizes cathode dark-space region adjacent to high negative-potential surfaces. Feedthrough is made of metal and glass, is helium leaktight, and is bakeable; it can be incorporated into any vacuum apparatus

B76-10006

TRIPLE-LAYER BUBBLE-DOMAIN FILM

R D Henry (Rockwell Intern Corp)

Mar 1976

LANGLEY-11755

Vol 1, No 1, p 14

Stratified composite improves translational velocity while providing hard-bubble suppression and eliminating coercive field inhomogeneities

B76-10007

PRINTED-CIRCUIT SOLAR-CELL ARRAY

R F Currier (Lockheed Missiles and Space Co) and W L Palmer (Lockheed Missiles and Space Co)

Mar 1976

M-FS-23128

Vol 1, No 1, p 14

Flexible solar-cell array is made thinner and lighter by placing array on substrate which is a lamination of two sheets of plastic film with etched electrical connector for cells between films

B76-10008

IMPROVED WET-SLUG CAPACITOR

C M Ward (Martin Marietta Corp)

Mar 1976 See also B74-10294, B75-10274

LANGLEY-11720

Vol 1, No 1, p 15

Capacitor uses all-tantalum seals and straight, ungelled, 30 percent sulphuric acid electrolyte to reduce leakage from order of milliamperes to low-microampere region. Design offers better reliability in severe environments encountered in military and industrial electronics systems

B76-10009

A/D CONVERTER

M D Mason (Martin Marietta Corp)

Mar 1976

LANGLEY-11319

Vol 1, No 1, p 16

Two-part dual-slope system converts both low-level and high-level analog signals at 500 8-bit words/second with an accuracy of 3 percent

B76-10010

CONTROL LOGIC FOR SUCCESSIVE-APPROXIMATION

A/D CONVERTERS

T O Anderson

Mar 1976

NPO-11937

Vol 1, No 1, p 18

Iterative building-block approach is used to minimize component count. Modular design has same logic structure for all bits

B76-10011

M-ARY SHIFT REGISTER

M Perlman

Mar 1976

NPO-11868

Vol 1, No 1, p 19

Binary devices are used to construct an m-ary linear feedback shift register

01 ELECTRONIC COMPONENTS AND CIRCUITS

B76-10012

IMPROVED MICROBRIDGE JOSEPHSON DEVICES

P N Peters and L B Holdeman (Natl Acad of Sci)

Mar 1976

M-FS-23274

Vol 1, No 1, p 20

Germanium overcoating of superconducting microbridges protects against electrical noise but does not limit sensitivity

B76-10013

INCREASED SAFETY IN MERCURY-CONTAINING DEVICES

G S Evans (Westinghouse Elec Corp)

Mar 1976

M-FS-23308

Vol 1, No 1, p 20

Amalgamating metal, such as gold tin, lead, cadmium, or indium, included inside mercury lamps reduces amount of escaping mercury vapor when lamps are fractured

B76-10014

ORGANIC ADHESIVES FOR HYBRID MICROCIRCUITS

K L Perkins (Rockwell Intern Corp) and J J Lican (Rockwell Intern Corp)

Mar 1976

M-FS-23370

Vol 1, No 1, p 21

Engineering design guidelines enumerate and briefly describe selected adhesive properties General review of polymeric types of adhesives is included and major types of commercially available adhesives specifically designed for microelectronic use are identified

B76-10015

POLYMER ADHESIVES FOR HYBRID CIRCUITS

S V Caruso and J O Honeycutt

Mar 1976

M-FS-23287

Vol 1, No 1, p 21

Report discusses number of tests used in comparing polymer adhesives with metal bonding processes and includes charts and photographs to illustrate test results Findings suggest reduced quality control costs when epoxies are used in fabrication of microcircuits

B76-10137

TRANSISTOR-TO-SUBSTRATE BOND QUALITY

T A Telfer (GE)

Aug 1976

M-FS-21931

Vol 1, No 2, p 151

Quantitative measurement of X-ray images of bonded power-transistor chips is accomplished by using a light meter, which determines percentage of voids in bond

B76-10138

DC-TO-DC CONVERSION WITH VOLTAGE MULTIPLIERS

W T Harrigill, Jr and I T Myers

Aug 1976 See also NASA-TM-X-71566 (N74-26737),

NASA-TM-X-71735 (N74-23851)

LEWIS-12297

Vol 1, No 2, p 152

Compact device uses transformerless capacitor/diode voltage multiplier Advantages include efficiency at high power levels, increased reliability due to elimination of magnetics and associated electrical transients, no magnetic shielding requirement, and adaptability to modular or integrated circuit systems

B76-10139

MODULAR DESIGN OF HIGH FREQUENCY CIRCUITS

J T Zimmer (Raytheon Co)

Aug 1976

M-FS-23408

Vol 1, No 2, p 153

Method of circuit development separates electrical functions into noninterdependent parts, uses standard commercially available circuit elements, and establishes unified circuit-packaging arrangement Packaging scheme is cost-effective, does not compromise electrical circuit performance from video to UHF frequencies and leaves circuits accessible for modification and adjustment

B76-10140

FLUORESCENT-LAMP POWER SUPPLY

W E Milberger (Westinghouse Elec Corp)

Aug 1976

MSC-14900

Vol 1, No 2, p 154

High-efficiency cost-effective power source employs resonant circuit to change modes when passing from starting to running condition

B76-10141

COMPACT RECONDITIONER FOR NI/CD CELLS

R E Kapustka

Aug 1976

M-FS-23270

Vol 1, No 2, p 155

Extension of life of multiple-cell nickel-cadmium battery packs is accomplished by reconditioning method requiring discharge of each battery cell Compact and lightweight dc-to-dc converter replaces relay-sensor system, protecting against voltage-reversal damage, and monitors overall cell condition

B76-10142

SOLID-STATE PARTICLE DETECTORS

J R Gigante (Maryland Univ) and R A Lundgren (Maryland Univ)

Aug 1976

GSFC-11785

Vol 1, No 2, p 156

Fabrication technique, involving change in ratio of resistance of alkali metal diffused layer to thickness of depletion layer, enhances sensitivity in nuclear-particle detectors

B76-10143

REMOVAL OF ENCAPSULATING MATERIALS

G L Jacobs (Sperry Rand Corp)

Aug 1976

GSFC-11696

Vol 1, No 2, p 157

Techniques involving softening or dissolving of potting materials leaves electronics unaffected Procedure may be used with almost any solvent or plastic within acceptable temperature and pressure ranges

B76-10144

HIGH-TEMPERATURE FLAT-CONDUCTOR CABLE

W S Rigling (Martin Marietta Corp)

Aug 1976

M-FS-23451

Vol 1, No 2, p 157

Temperature limit of 25-conductor signal cable and 3-conductor power cable fabricated using woven and roll laminated technique, increased from 200 C to 350 C when polyimide/fluorinated ethylene propylene or polytetrafluoroethylene insulation films and fluorinated ethylene propylene as adhesive medium is applied

B76-10145

IMPROVED SOLDERING IRON TIP

M A Vanasse (Rockwell Intern Corp)

Aug 1976

M-FS-19349

Vol 1, No 2, p 158

Nickel-plated device with machined recesses matching the multipin pattern of a particular circuit module, facilitates repairs to electronic systems and reduces chance of damage to adjacent components Nickel-plating reduces oxidation and scaling Recesses retain sufficient amount of molten solder to uniformly wet pins for simultaneous heating and extraction

B76-10146

CONNECTOR CONTACT-RING BUS

J Ligon (Rockwell Intern Corp)

Aug 1976

MSC-19480

Vol 1, No 2, p 159

Use of device eliminates crimp connectors and ferrules, resulting in compact termination assembly and efficient use of back-shell space Pair of insulator rings, one at each end of assembly, provides spacing between disc caps and contact rings

B76-10147

WAVEGUIDE-TO-COAX TRANSITION/LOW-PASS FILTER

R B Quinn

Aug 1976

NPO-13642 Vol 1, No 2, p 160
Low-insertion-loss combination device operates at 4.5 K and has reflection coefficient of better than -21 dB

B76-10148
POWER-CONTROL SWITCH
L. L. Kessler (Westinghouse Elec. Corp.)
Aug 1976

M-FS-23395 Vol 1, No 2, p 161
Constant-current source creates drive current independent of input-voltage variations, 50 percent reduction in power loss in base drive circuitry, maintains essentially constant charge rate, and improves rise-time consistency over input voltage range

B76-10149
CMOS-COMPATIBLE TRISTATE CABLE DRIVER
R. L. Pryor (RCA)
Aug 1976

M-FS-23410 Vol 1, No 2, p 162
Device provides noise immunity, draws zero standby power, and improves performance where same bus connects several pieces of CMOS equipment

B76-10150
ELECTRICAL-CONDUIT SIZING GAGE
C. E. Caveness (Rockwell Intern. Corp.)
Aug 1976

MSC-19491 Vol 1, No 2, p 163
Device indicates trade-size number of electrical conduit without use of tables or references

B76-10151
TESTING FLAT-CONDUCTOR CABLE
R. W. Loggins and R. H. Herndon
Aug 1976

M-FS-23174 Vol 1, No 2, p 164
Report describes characteristics of type of FCC which consists of three AWG No. 12 flat copper conductors laminated between two films of polyethylene terephthalate (Mylar) insulation with self-extinguishing polyester adhesive

B76-10152
SURFACE MOUNTED FLAT-CONDUCTOR CABLE
J. D. Hankins and J. R. Carden
Aug 1976

M-FS-223135 Vol 1, No 2, p 164
Report presents drawbacks and advantages of FCC for home wiring. Two types of surface-wiring schemes are considered: snap-on baseboard and extendable baseboard. Both types lower installation cost and time.

B76-10153
TEMPERATURE RISE OF INSTALLED FCC
J. D. Hankins
Aug 1976

M-FS-23127 Vol 1, No 2, p 164
Report discusses temperature profiles of installed FCC for wood and tile surfaces. Three-conductor FCC was tested at twice nominal current-carrying capacity over bare floor and under carpet, with result indicating that temperature rise is not a linear function of current with FCC at this level.

B76-10154
FLAT-CONDUCTOR CABLE BASEBOARD
J. D. Hankins
Aug 1976

M-FS-23141 Vol 1, No 2, p 165
Report presents procedures and results of test of FCC baseboard system developed for use in commercial and residential applications. Mechanical, electrical, chemical, environmental, thermal, and analytical tests subjected system to conditions of greater severity than would be encountered in normal service, system withstood tests favorably.

B76-10155
MANUFACTURE OF FLAT-CONDUCTOR CABLE

W. Angele
Aug 1976

M-FS-23121 Vol 1, No 2, p 165
Report discusses cable design and fabrication of both unshielded and shielded FCC. Discussion includes numerous cable configurations and fabrication processes, such as laminating, etching, extruding, and weaving. Bibliography lists additional references.

B76-10156
ELECTRONIC CIRCUITS Vol 1, No 2, p 166
Innovator not given Aug 1976 See also NASA-SP-5972(07)
HQN-10894

Twenty-nine circuits and circuit techniques developed for communications and instrumentation technology are described. Topics include pulse-code modulation, phase-locked loops, data coding, data recording, detection circuits, logic circuits, oscillators, and amplifiers.

B76-10157
ELECTRICAL-CABLE DESIGN GUIDE
G. A. Phelps (Rockwell Intern. Corp.)
Aug 1976

M-FS-24280 Vol 1, No 2, p 166
Formulas and tables are provided to aid designers in determining electrical cable jacket sizes, number of wires per lay pattern, filler material requirements, jacket wall thickness, and overall cable diameters.

B76-10158
INSTALLATION OF SURFACE-MOUNTED FLAT-CONDUCTOR CABLE
J. R. Carden
Aug 1976

M-FS-23266 Vol 1, No 2, p 166
Guide describes step-by-step process for installation of interior surface-mounted FCC used in commercial and residential buildings. Photographs illustrate how cable-riser and baseboard covers are installed as well as receptacle assembly and receptacle-cover replacement.

B76-10159
GUIDELINES FOR MULTIPLE LSI PACKAGING
C. J. Peckinpah (Electron Commun., Inc.)
Aug 1976

M-FS-23367 Vol 1, No 2, p 166
Handbook provides specific guidelines related to ceramic multilayer circuit fabrication in terms of packaging density and interconnection methods, guiding the designer from initial stages of ceramic multilayer interconnection and artwork generation through test pattern utilization, assembly operations, and final inspection and test procedures.

B76-10290
A NONSATURATING DC-TO-DC PARALLEL POWER CONVERTER
T. Lavigna, G. Gant (Xerox Corp.), and L. Jan (Xerox Corp.)
Jan 1977

GSFC-12047 Vol 1, No 3, p 311
Device is conventional circuit modified with pair of diode rectifiers coupled to switching transistors via feedback winding. Transient-causing collector-current overlap between transistors is eliminated. Technique may be used with nonsaturating parallel-transistor converters operating from voltage source which remains fixed or varies over small range.

B76-10291
A LINEAR PHASE DEMODULATOR
R. R. Rippey
Jan 1977

GSFC-12018 Vol 1, No 3, p 312
Circuit operates on feedback principle to reduce modulation index of received signal, and thus reinserts carrier component in suppressed carrier signal. Device can demodulate phase-shift-keyed signals which do not have carrier component, and it has linear region of plus or minus 150 deg.

01 ELECTRONIC COMPONENTS AND CIRCUITS

B76-10292

FLUORESCENT DIMMING BALLAST

P Lutus (ILC Technol)

Jan 1977

MSC-14937

Vol 1, No 3, p 313

High-frequency inverter and saturable inductor control fluorescent lighting system operating from 20 kHz power supply. Filament power is unaffected, and only ballast is controlled.

B76-10293

TOROIDAL CONVERTER CORE

W T McLyman

Jan 1977

NPO-13413

Vol 1, No 3, p 314

Improved approach consists of cut and uncut cores nested in concentric configuration. Cores are made by winding steel ribbon on mandrel and impregnating with epoxy to bond layers together. Gap is made by cutting across wound and bonded core. Rough ends are ground or lapped.

B76-10294

COMPOSITE STACKED MOLY-PERMALLOY CORES

W T McLyman

Jan 1977

NPO-13578

Vol 1, No 3, p 316

Composite core comprised of two sections, each having different permeability results in size and weight reduction. One section provides sufficient induction under light loading conditions, while other section offers minimum inductance under heavy loading.

B76-10295

BAND-ELIMINATION FILTER

G B Shelton (Sperry Support Services)

Jan 1977

M-FS-23303

Vol 1, No 3, p 317

Helical resonator is employed to produce stable, highly selective filter. Other features of filter include controlled bandwidth by cascading identical stages and stagger tuning, adjustable notch depth, good isolation between stages, gain set by proper choice of resistors, and elimination of spurious responses.

B76-10296

COUNTING DIGITAL FILTER

S Zohar

Jan 1977 See also B76-10297, B76-10298, B76-10299

NPO-11821

Vol 1, No 3, p 318

Overall design of filter combines radix converter with ADC in single functional unit that directly converts analog input to its negative binary representation. Four basic elements of filter are fixed register, shift register, counter, and accumulator.

B76-10297

CIRCULATING-LINES DIGITAL FILTER

S Zohar

Jan 1977 See also B76-10296, B76-10298, B76-10299

NPO-11831

Vol 1, No 3, p 319

Filter has array of line segments of various lengths which may be switched into circulating line by machine operator. Design is useful in cases where filter speed is not critical, by sacrificing speed, filter can be made at lower cost.

B76-10298

PARTITIONED COUNTING DIGITAL FILTER

S Zohar

Jan 1977 See also B76-10296, B76-10297, B76-10299

NPO-11832

Vol 1, No 3, p 320

High-speed variation of counting digital filter implements count in a way which allows shortest permissible spacing between samples of input signal to be small fraction of time it takes to compute output sample.

B76-10299

HYBRID DIGITAL-ANALOG IMPLEMENTATION OF DIGITAL FILTERS

S Zohar

Jan 1977 See also B76-10296, B76-10297, B76-10298

NPO-11833

Vol 1, No 3, p 321

Hybrid device, which is modification of counting digital filter, obtains high speed through lower precision mainly effected by substituting analog device for digital counter.

B76-10300

ELECTRICAL-SPLICING CONNECTOR

E J Stringer (Rockwell Intern Corp)

Jan 1977

M-FS-24254

Vol 1, No 3, p 322

Connection can be made without removing insulation and connector case insulates splice. Device can be made in various sizes and saves time especially when working on prototype boards with several interconnecting test leads.

B76-10301

FOLDBACK CURRENT-LIMITING FOR HYBRID REGULATOR

C H Crider (IBM)

Jan 1977

M-FS-22995

Vol 1, No 3, p 323

Technique utilizes operational high gain amplifier, which greatly reduces temperature sensitivity of short circuit current to amplify and subtract voltage across current sensing resistor from regulated output voltage. Small current sensing resistor may be used to eliminate power loss problem found in conventional circuits.

B76-10302

FEEDBACK ARRANGEMENT FOR REGENERATIVE SWITCHES

W T McLyman

Jan 1977

NPO-13060

Vol 1, No 3, p 324

Load current feedback technique samples load current instead of collector current, which makes it possible to operate switching transistors at their maximum capacities for pulse loads.

B76-10303

LOW-COST PRESSURE-DATA ENCODER

R B Kolbly and S R Hedges

Jan 1977

NPO-13692

Vol 1, No 3, p 325

Electronic encoding altimeter has pulsed output with pulse width proportional to altitude and converts pressure-proportional input voltage to digital signal that may then be routed to monitoring or display equipment.

B76-10304

LOW-VOLTAGE MOTOR HEATER

K R Bezant (TWA)

Jan 1977

KSC-10651

Vol 1, No 3, p 326

Heater has stepdown transformer for low voltage range, variable transformer for holding within 0-to-28 volt range and voltmeters and ammeters to monitor load and wattage. Regulated thermostat controls contactor, permitting heater to cycle.

B76-10305

MULTIPLE-LAYER PRINTED-WIRING TRACE CONNECTOR

D E Pizeck

Jan 1977

LANGLEY-11709

Vol 1, No 3, p 327

Nickel-plated spring-steel foil connector is hollow pin with lengthwise slit, that is inserted into improperly plated-through holes. Edges of connector make positive contact with copper pads within hole.

B76-10306

BATTERY SINGLE-CELL PROTECTION SYSTEM

R D Thomas and W J Nagle

Jan 1977

LEWIS-12039

Vol 1, No 3, p 328

Protective circuit consists of solid state comparator switch and high current switching device combined into single module.

which can be mounted directly on each cell as part of cell or battery case construction. System prohibits driving cells beyond set voltage limits and allows deeper discharge without cell reversal.

B76-10307**WIDEBAND DISTRIBUTION AMPLIFIER**

C F Foster

Jan 1977

NPO-13256

Vol 1, No 3, p 330

Device provides 12 outputs isolated from each other by 70 dB at 100 MHz, frequency range of 0.1 to 100 MHz, less than 2 deg phase shift over temperature change of 0 to 50 C, and computer level output to monitor module signal quality.

B76-10308**OVERLOAD-PROTECTOR/FAULT-INDICATOR CIRCUIT**

J R Paluka and S F Moore (Resdel Eng Corp)

Jan 1977

NPO-13592

Vol 1, No 3, p 331

Circuit incorporates three-terminal current limiter (78M24) to increase overall reliability and to eliminate transistor burnouts resulting from shorted interconnection lines and other overloads. Fast-acting light emitting diodes across the limiters show status of transistor output circuits.

B76-10309**LOW-FREQUENCY SINE WAVE HARD-LIMITING TECHNIQUE**

T O Anderson

Jan 1977

NPO-13230

Vol 1, No 3, p 332

Circuit includes serial-in/parallel-out shift register and weighting network that are used to eliminate effects of noise and other nonrepetitive circuit transients. Register and weighting network average decisions from section of signal where decisions are more dependable or where differences between two consecutive samples are larger.

B76-10310**SIGNAL LEVEL DETECTOR**

T O Anderson

Jan 1977

NPO-13272

Vol 1, No 3, p 333

Frequency-independent circuits measure amplitude of sine waves via Schmitt-trigger circuits, pair of inverters, and two flip-flop stages. Accuracy of unit is limited by Schmitt trigger threshold levels, which depend on temperature and on component variations from unit to unit.

B76-10311**PLUG-IN CIRCUIT MONITOR**

E J Stringer (Rockwell Intern Corp)

Jan 1977. See also B76-10312

MSC-19455

Vol 1, No 3, p 334

Intelligent electronic circuit is used to monitor other circuits within module and to warn of imminent failure of module under surveillance. Monitor is housed in rectangular connector and plugs into mating jack originally designed to terminate flat conductor cables. Device can be made from existing premolded rectangular connectors.

B76-10312**MICROPROGRAMMABLE MODULE**

E J Stringer (Rockwell Intern Corp)

Jan 1977. See also B76-10311

MSC-19456

Vol 1, No 3, p 335

Device is small lightweight selective circuit/function panel that utilizes microelectronic circuits in flat packs to eliminate hard wiring and heavy-harness routing to various subsystems.

B76-10313**MAJORITY-VOTED LOGIC FAIL-SENSE CIRCUIT**

W T McLyman

Jan 1977

NPO-13107

Vol 1, No 3, p 336

Fail-sense circuit has majority-voted logic component which

receives three error voltage signals that are sensed at single point by three error amplifiers. If transistor shorts, only one signal is required to operate. If transistor opens, two signals are required.

B76-10314**HYBRID THIN-FILM AMPLIFIER**

G Cleveland (Lockheed Missiles and Space Co)

Jan 1977

MSC-13975

Vol 1, No 3, p 337

Miniature amplifier for bioelectronic instrumentation consumes only about 100 mW and has frequency response flat to within 0.5 dB from 0.14 to 450 Hz. Device consists of five thin film substrates which contain eight operational amplifiers and seven field-effect transistor dice.

B76-10315**SOLID-STATE RF SWITCH**

M F Hanna and H K Detweiler

Jan 1977

NPO-13081

Vol 1, No 3, p 338

Consisting of NAND gates, switch can be expanded to multipole input and can switch at frequencies up to 30 MHz. Device uses digital integrated circuits to provide isolation between inputs and between input and output parts.

B76-10316**RAM DIGITAL FILTER**

S Zohar

Jan 1977

NPO-13659

Vol 1, No 3, p 339

Modification of conventional digital counting filter is designed to store all possible combinations of filter coefficients in random access memory. Filter includes analog-to-digital converter, X shift register, memory accumulator, and digital-to-analog converter.

B76-10317**SIMPLIFIED CUT-CORE INDUCTOR**

W T McLyman

Jan 1977

NPO-13600

Vol 1, No 3, p 339

Technical memorandum describes design of linear reactor fabricated from grain-oriented steel. It includes design charts and nomographs and illustrates design of grain-oriented inductor via seven-step example. Typical values of core inductance, operating frequency, and coil current (dc and ac) are given.

B76-10318**MASK ANALYSIS PROGRAM**

M Martin and C L Mitchell (M&S Computing Inc)

Jan 1977

M-FS-23431

Vol 1, No 3, p 340

Program uses minimal core and time resources and performs following analysis functions: artwork verification, device identification, nodal analysis, capacitance calculation, and logic equation generation. For data base simplicity, program processing operates on mask data which has been converted from its original form to orthogonal rectangles.

B76-10439**IMPROVED RESOLUTION FOR SENSOR ARRAYS**

W C Goss

Mar 1977

NPO-13745

Vol 1, No 4, p 487

Interpolated algorithm, simple enough to hard-wire by hand, improves resolution by factor of 5 to 20.

B76-10440**CHARGE-SENSITIVE AMPLIFIER WITH NOTCHED FREQUENCY RESPONSE**

D F Stout (Martin Marietta Corp) and M D Mason (Martin Marietta Corp)

Mar 1977

LANGLEY-11317

Vol 1, No 4, p 488

Charge sensitive amplifier outputs bipolar pulse with maximum peak of 5 volts. This is applied to negative inputs of two high-speed

01 ELECTRONIC COMPONENTS AND CIRCUITS

comparators. These change output states only if pulse applied to negative inputs exceeds dc bias on their positive inputs. Output is transferred to digital event counter.

B76-10441

A PASSIVE CHEVRON REPLICATOR

T R Oeffinger (Rockwell Intern Corp) and L R Tocci (Rockwell Intern Corp)

Mar 1977

LANGLEY-11906

Vol 1, No 4, p 490

Instrument design provides replicate function between device storage area and guardrail detector in order that nondestructive read-out of memory can be achieved. Use of guardrail detectors in magnetic domain (bubble) circuits is proposed method of increasing detector signal output by increasing detector size without dedicating an excessive amount of device chip area to detector portion.

B76-10442

NEW PASSIVE REPLICATOR FOR BUBBLE DOMAIN DEVICES

P K George (Rockwell Intern Corp) and T Kobayashi (Rockwell Intern Corp)

Mar 1977

LANGLEY-11997

Vol 1, No 4, p 491

Bar-spacing tolerances are relaxed in replicator suitable for low-drive field.

B76-10443

CONTINUOUS-DATA FIFO BUBBLE SHIFT REGISTER

T T Chen (Rockwell Intern Corp)

Mar 1977

LANGLEY-11862

Vol 1, No 4, p 492

Simple loop first-in-first-out (FIFO) bubble memory shift register has continuous storage capability. Bubble shift register simplifies chip-control electronics by enabling all control functions to be aligned at same bit. FIFO shift register is constructed from passive replicator and annihilator combinations.

B76-10444

MULTIPLE-BUBBLE DETECTOR

P K George (Rockwell Intern Corp)

Mar 1977

LANGLEY-12043

Vol 1, No 4, p 493

Device is segmented multiple-input detector. Bubbles are fed into each section simultaneously. Detector output is improved by using passive replicators.

B76-10445

INDUCTORLESS VOLTAGE MULTIPLIER/CONVERTER

L H Bannister (MIT) and R H Baker (MIT)

Mar 1977

NPO-13757

Vol 1, No 4, p 493

Voltage multiplier configuration consists of identical stages connected in cascade to obtain desired output voltage.

B76-10446

DIGITAL VARYING-FREQUENCY GENERATOR

M J Allen (Martin Marietta Corp)

Mar 1977

MSC-16331

Vol 1, No 4, p 495

Generator employs up/down counters, digital-to-analog converters and integrator to determine frequency and time duration of output. Circuit can be used where varying signal must be controlled accurately over long period of time.

B76-10447

OPEN-LOOP DIGITAL FREQUENCY MULTIPLIER

R C Moore (Johns Hopkins Univ)

Mar 1977

MSC-12709

Vol 1, No 4, p 496

Monostable multivibrator is implemented by using digital integrated circuits where multiplier constant is too large for conventional phase-locked-loop integrated circuit. A 400 Hz clock is generated by divide-by-N counter from 1 Hz timing reference.

B76-10448

DIPLEXER SWITCH

Vol 1, No 4, p 497

C H Grauling, Jr (Westinghouse Elec Corp) and T W Parker (Westinghouse Elec Corp)

Mar 1977

LANGLEY-11546

Switch achieves high isolation and continuous input/output matching by using resonant coupling structure of diplexer. Additionally, dc bias network used to control switch is decoupled from RF input and output lines. Voltage transients in external circuits are thus minimized.

B76-10449

DEFLECTION AMPLIFIER FOR IMAGE DISSECTORS

P M Salomon

Mar 1977

NPO-13079

Vol 1, No 4, p 498

Balanced symmetrical y-axis amplifier uses zener-diode level shifting to interface operational amplifiers to high voltage bipolar output stages. Nominal voltage transfer characteristic is 40 differential output volts per input volt, bandwidth between -3 dB points is approximately 8 kHz, loop gain is nominally 89 dB with closed loop gain of 26 dB.

B76-10450

UNIVERSAL SOLAR-CELL TERMINAL

S Bashin (TRW, Inc) and F G Kelley (TRW, Inc)

Mar 1977

M-FS-23505

Vol 1, No 4, p 499

Terminal, which replaces stakes or lugs in conventional design with loop receptacles for wires from cell and harness, uses dissimilar bonding properties (metal-to-glass and/or ceramics) of iron-nickel-cobalt alloy in conjunction with standard termination.

B76-10451

SOLID-STATE TURN-COORDINATOR DISPLAY

R K Crouch, W L Kelly, and B D Meredith

Mar 1977. See also NASA-TM-X-7282 (N76-32186)

LANGLEY-12090

Vol 1, No 4, p 500

Light emitting diodes are employed in displays for aircraft instrument applications. Device offers three levels of brightness to compensate for varying degrees of ambient light present in cockpit.

B76-10452

DOPPLER EXTRACTION WITH A DIGITAL VCO

E R Starnier (RCA) and E J Nossen (RCA)

Mar 1977

MSC-14814

Vol 1, No 4, p 502

Digitally controlled oscillator in phased-locked loop may be useful for data communications systems, or may be modified to serve as information extraction component of microwave or optical system for collision avoidance or automatic braking. Instrument is frequency-synthesizing device with output specified precisely by digital number programmed into frequency register.

B76-10453

SIGNAL ENHANCEMENT FILTERS

H B Killen (TRW, Inc) and W B Warren (TRW, Inc)

Mar 1977. See also NASA-CR-147537 (N76-21369)

MSC-14907

Vol 1, No 4, p 503

Designed to smooth digital output of radar tracking systems, two filters prevent noise-induced inaccuracies and result in input/output noise-variance reduction on order of 10:1. One filter is special purpose device with limited arithmetic-logic unit and other is true programmable microprocessor.

B76-10454

SERIAL-DATA CORRELATOR/CODE TRANSLATOR

L E Morgan

Mar 1977

KSC-11025

Vol 1, No 4, p 505

System consisting of sampling flip flop, memory (either RAM or ROM) and memory buffer correlates sampled data with predetermined acceptance code patterns, translates acceptable

code patterns to nonreturn-to-zero code and identifies data dropouts

B76-10455**UHF/MICROWAVE OSCILLATOR/AMPLIFIER**

L. L. Kleinberg

Mar 1977

GSFC-12113

Vol 1, No 4, p 505

Circuit uses tunnel diode as negative resistance and bipolar transistor as an active device in conjunction with resistors and capacitors. Transistor provides inductance required to produce oscillation and tuning. Output is taken from transistor collector and avoids unwanted characteristics of two-terminal oscillator/amplifier.

B76-10458**CAPACITIVELY-COUPLED DATA RECEIVER CLIPPER STAGE**

F. W. Saunders (Singer Co.)

Mar 1977

MSC-14989

Vol 1, No 4, p 507

Circuit technique compensates for dc offset and asymmetry in dc clipping levels, negates unbalance in input waveform that causes voltage offset at end of data word, blocks any dc component that is generated by asymmetrical operation of clipper and improves data threshold detection.

B76-10457**BIASED-CIRCUIT DIGITAL DATA LINE RECEIVER**

F. C. Fitzgerald (IBM)

Mar 1977

MSC-14967

Vol 1, No 4, p 508

Modified-interface circuit, consisting of input diodes, current sources, and emitter followers transfers data between digital electronic equipment and also aids circuit isolation when driver and all receivers but one are not powered. Circuit rejects spurious noise signals without impeding valid signal transfer.

B76-10458**LOW-POWER PROGRAMMABLE HIGH-VOLTAGE SUPPLY**

D. F. Stout (Martin Marietta Corp.) and R. A. Perala (Martin Marietta Corp.)

Mar 1977

LANGLEY-11316

Vol 1, No 4, p 508

Converter is used to energize group of proportional-counter event-detection tubes. Supply is programmed by using output signal of low voltage digital-to-analog converter. Programming voltage ranges from 1.53 to 2.91 V in 127 0.0108 mV steps, and it is used to control converter high voltage output which ranges from 700 to 1,335 V in like number of increments.

B76-10459**THICK-FILM PREAMPLIFIER**

G. C. Bailey

Mar 1977

NPO-13416

Vol 1, No 4, p 509

Preamplifier with hybrid discrete components and integrated-circuit packaging is designed specifically for use as television image-tube output signal conditioner. Circuit is fabricated on alumina substrate, measuring 0.5 by 0.5 by 0.015 inch using gold-base conductor with conductive gold crossovers and dielectric insulation.

B76-10460**MICROPROGRAMMED TELEMETRY PROCESSOR**

L. H. Gordon (Hughes Aircraft Co.) and J. B. Shackelford (Hughes Aircraft Co.)

Mar 1977

ARC-11061

Vol 1, No 4, p 511

Minimum hardware, reliable processor responds rapidly to changing requirements simply by changes in contents of programmable read-only memory. General purpose controller can transfer data onto and off of data bus, perform logic and arithmetic manipulations, and store pertinent data in small internal random-access memory.

B76-10461**SEMICONDUCTOR OHMIC CONTACT**

F. Z. Hawrylo (RCA) and H. Kressel (RCA)

Mar 1977

LANGLEY-11691

Vol 1, No 4, p 512

Contact formed on p-type surface of semiconductor laser has several advantages: highly conductive degenerate region and narrow band gap provides surface for good metal-to-semiconductor contact, lattice parameter of GaAs is 5.6533 Å, improved lattice match eases interface strain which reduces interface cracking of semiconductor material.

B76-10462**LOW-COST DUAL-FREQUENCY MICROWAVE ANTENNA**

I. Yu. (Lockheed Electronics Co.)

Mar 1977

MSC-16100

Vol 1, No 4, p 513

Antenna is circularly-polarized microwave device with high-band frequency and low-band frequency elements. Relatively low impedance of low-band frequency element can be matched to desired impedance by adding etched matching network.

B76-10463**ACTIVE RETRODIRECTIVE ANTENNA**

R. C. Chernoff and R. C. Tausworthe

Mar 1977

NPO-13641

Vol 1, No 4, p 514

Active antenna is self-phasing array which transmits signal in direction of remote pilot source. Word 'active' means that transmitted power is generated by sources associated with antenna rather than by reflection of incident signal, as in passive retrodirective antenna. Array is also known as self-focusing array.

B76-10464**MULTIFREQUENCY, BROADBAND, DUAL-POLARIZED ANTENNA**

K. A. Green (Microwave Res. Corp.)

Mar 1977

NPO-13866

Vol 1, No 4, p 516

Corrugated, conical horn ring-loaded antenna can be fed through vertex of cone with wideband waveguides, such as double-ridged rectangular or quad-ridged circular, or simply ring-loaded, corrugated waveguides. Antenna is also fed through coupling apertures in side of cone at appropriate diameters.

B76-10465**ANALOG-TO-DIGITAL CONVERSION FOR RADIX (-2)**

S. Zohar

Mar 1977

NPO-13093

Vol 1, No 4, p 517

Device, which converts directly from analog signal to its radix (-2) representation, is based on successive approximation approach.

B76-10466**POWER SUPPLY WITH OPTICAL-ISOLATOR CONTROL**

R. H. Baker (MIT) and J. T. Wheeler (MIT)

Mar 1977

HQN-10827

Vol 1, No 4, p 519

Power supply consists of several stages interconnected and programmed for required output. In capacitor charging mode, transistor switches are closed. Last stage is in series with rectifier that prevents current from flowing backward into circuit. In capacitor discharge mode, transistor switches are closed, and voltage delivered to load is sum of voltages across capacitors.

B76-10467**ACTIVE INRUSH-CURRENT LIMITER**

R. A. Kichak

Mar 1977

GSFC-11789

Vol 1, No 4, p 520

By stretching turn-on time from approximately 1 to 200 ms, effects of inrush current (and of associated large current spikes) and current rate of rise (di/dt) are made potentially less severe. Limiter arrangement consists of time-variable impedance.

01 ELECTRONIC COMPONENTS AND CIRCUITS

connected in series between input dc power source return and power circuit of converter

B76-10468

ALL-DIGITAL SEQUENCE CORRELATOR

A Laderman

Mar 1977

NPO-13737

Vol 1, No 4, p 521

Correlator can handle long-length pseudonoise sequences by adding shift registers, counters and adders in tree configuration of basic 16-bit scheme Correlation coefficient of unity or zero is generated when all bits of sequence are received and positioned correctly in input shift register

B76-10469

RELATIVE STIFFNESS OF FLAT-CONDUCTOR CABLE

J D Hankins

Mar 1977

M-FS-23537

Vol 1, No 4, p 522

Bending moment data were taken on ten different cable samples and normalized to express all stiffness factors in terms of cable 5.1 cm in width Relative stiffness data and nominal physical characteristics are tabulated and presented in graphical form for designers who may be interested in finding torques exerted on critical components by short lengths of cable

B76-10470

TRANSFORMER DESIGN TRADEOFFS

W T McLyman

Mar 1977

NPO-13755

Vol 1, No 4, p 523

Technical memorandum includes transformer area product numbers which are used to summarize dimensional and electrical properties of C-cores, pot cores lamination, powder cores and tape-wound cores To aid in core selection, comparison of five common core materials is presented to indicate their influence on overall transformer efficiency and weight

B76-10471

DIELECTRIC COVERED ANTENNAS

J F Lindsey (McDonnell-Douglas Corp)

Mar 1977

MSC-16186

Vol 1, No 4, p 523

Because of simplicity and adaptability, new computer program incorporates modified version of plane-wave transmission theory including multiple internal reflections and effects of ground-plane reflection Model assumes isotropic hemispherical radiator from point source with individual rays incident upon several dielectric materials

B76-10472

ELECTROSTATIC ANALYSIS OF CHARGE-COUPLED STRUCTURES

J D Gassaway (Mississippi State Univ)

Mar 1977

M-FS-23507

Vol 1, No 4, p 524

Package of three computer programs performs two-dimensional electrostatic analysis to determine efficiency of charge transfer One program can be used to analyze three-electrode charge-coupled device input/output gates and other two programs can be used to analyze two-phase structures containing two or four electrodes with periodic boundary conditions

(McDonnell-Douglas Corp), and S D Cornish (McDonnell-Douglas Corp)

Mar 1976

M-FS-21577

Vol 1, No 1, p 23

System is capable of detecting ultraviolet light emitted by match size flame at distance of 10 ft System is not affected by high energy or particulate radiation and is therefore particularly suited for applications around nuclear plants and X-ray equipment

B76-10017

DATA-STORAGE COMPRESSION SCHEME

P M Salomon and L F Schmidt

Mar 1976

NPO-13488

Vol 1, No 1, p 24

System uses scheme which does not respond to redundant data Encoded sensor output signals are transferred to central processing unit only when change occurs in encoded 12-bit word

B76-10018

ALL-WEATHER ICE INFORMATION SYSTEM

R J Schertler, R A Mueller, R J Jirberg D W Cooper, J E Heighway, A D Holmes, R T Gedney and H Mark

Mar 1976

LEWIS-12638

Vol 1, No 1, p 25

Heart of system consists of two major components side-looking airborne radar system for detecting ice cover and type, and modified short pulse S-band radar system for simultaneously determining ice cover regardless of cloud cover

B76-10019

GRAPHIC-TO-DIGITAL CONVERSION SYSTEM

F L Rosenthal (Rockwell Intern Corp)

Mar 1976

M-FS-24410

Vol 1, No 1, p 26

Computer-controlled system allows operator to record only those data points selected It consists of commercially available X-Y plotter computer, and A/D and D/A converters New component is strain gage controller and amplifier which can be adapted to existing systems

B76-10020

SENSOR FOR ANALOG SPEED CONTROLS

A G Birchenough

Mar 1976 See also NASA-TM-X-3200 (N75-17577)

LEWIS-12697

Vol 1, No 1, p 28

System has speed control accuracy within approximately 0.001 percent Accuracy is limited only by crystal reference oscillator, however effect is negligible on original system stability and transient response Design can be adapted to other systems and provides compromise between either fully digital or fully analog systems

B76-10021

SELECTIVE IMAGE ENHANCEMENT

R C Gonzalez (Tennessee Univ) and B A Fittes (Tennessee Univ)

Mar 1976

M-FS-23364

Vol 1, No 1, p 29

Digital technique for television systems can be used with remote manipulators Algorithm is used to divide image into N-by-N picture elements which may be individually enhanced Enhancement may be controlled with joystick Similar arrangement simplifies remote manipulator operation

B76-10022

REMOTE ACCESS OF MODEM BY DIGITAL CONTROL

H Lopez

Mar 1976

GSFC-11943

Vol 1, No 1, p 30

Semiautomated system enables operator to measure overall quality of communications link between console (point A) and far-end location (point B) By transmitting test pattern from point A receiving it at point B and transmitting back to point A in loopback, unassisted operator can evaluate overall link performance

02 ELECTRONIC SYSTEMS

B76-10016

ULTRAVIOLET FIRE DETECTOR

J E Turnage (McDonnell-Douglas Corp), R M F Linford

B76-10023**PULSE AMPLITUDE DISCRIMINATOR THRESHOLD CALIBRATION**

D P Peletier (Johns Hopkins Univ)
Mar 1976

GSFC-11912

Vol 1, No 1, p 31

Closed-loop digital circuit insensitive to drift with age, monitors input signals in particle detector. Basic elements of calibrator are clock circuit, weighting circuit, integrator, and chopper

B76-10024**ELECTRO-OPTICAL LIQUID DEPTH SENSOR**

D B Heppner (General Dynamics Corp) and S O Atwood (General Dynamics Corp)
Mar 1976

M-FS-22921

Vol 1, No 1, p 32

Transducer utilizes absorptive properties of water to determine variations in depth without disturbing liquid. Instrument is inexpensive, simple, and small and thus can be used in lieu of direct graduated scale readout or capacitive ultrasonic resistive or inductive sensors when these are impractical because of complexity or cost

B76-10025**GENERAL-PURPOSE DATA LINK**

M J Dinkins (GE)
Mar 1976

M-FS-22714

Vol 1, No 1, p 33

Communications modem comprising transmitter, demodulator, modulator, and receiver is compatible with telephone line, video pair, or 1,250 ohm twisted wire pair. It permits wide range of input and output voltages and flexible data rates, and it has provision for computer interface

B76-10026**UNICHROMATIC-CARRIER COLOR-TV SYSTEM**

K H Vorhaben (Lockheed Electronics Co) and P C Lipoma (Lockheed Electronics Co)
Mar 1976

MSC-14683

Vol 1, No 1, p 34

Optical system consists of two filter layers with each layer composed of transparent stripes alternating with dichroic color filter strips. System produces color multiplexed light signal by vertically orienting dichroic filter stripes perpendicular to scan lines of image tube

B76-10027**SERIAL-TO-PARALLEL COLOR-TV CONVERTER**

T W Doak (Philco-Ford Corp) R B Merwin (Philco-Ford Corp) S E Zuckswert (Philco-Ford Corp), and W Sepper (Philco-Ford Corp)
Mar 1976 See also NASA-CR-141891 (N75-26203)

MSC-14844

Vol 1, No 1, p 35

Solid analog-to-digital converter eliminates flicker and problems with time base stability and gain variation in sequential color TV cameras. Device includes 3-bit delta modulator, two-field memory, timing, switching, and sync network, and three 3-bit delta demodulators

B76-10028**TRACKING SYSTEM FOR MOVING SUBJECTS**

L N Mogavero, E G Johnsen (Natl Bur of Standards), J M Evans, Jr (Natl Bur of Standards), and J S Albus (Natl Bur of Standards)
Mar 1976

HQN-10880

Vol 1, No 1, p 36

Electronic system automatically focuses camera or spotlight on moving object. Subject is equipped with miniature ultrasonic or radio transmitter, its signal is picked up by two or more detectors, is phase detected and fed into computer which determines position of subject and sends command signals to servo for camera or spotlight

B76-10029**READOUT METHOD FOR STORED INFORMATION**

G W Lewicki

Mar 1976

NPO-13243

Vol 1, No 1, p 37

Readout technique increases density of stored information for projection onto facsimile reproduction. Data stored on line structures is scanned at 90 deg angle over area larger than recorded format to ensure complete recovery of information

B76-10160**AUTOMATIC FIRE/WEATHER DATA STATION**

H Lum, Jr
Aug 1976

ARC-10993

Vol 1, No 2, p 169

Prototype unmanned integrated system collects and processes fire-index data. System is based on state-of-the-art technology, utilizes low-cost hardware, and is highly reliable

B76-10161**UNBALANCED QUADRI-PHASE DEMODULATOR**

H S Kobayashi and S P Bradfield, III
Aug 1976

MSC-14840

Vol 1, No 2, p 170

New demodulator for suppressed carrier pulse-code-modulated signals represents incoming signals as vectors

B76-10162**FREE-SPACE MICROWAVE-POWER TRANSMISSION**

W C Brown (Raytheon Co)
Aug 1976

M-FS-23443

Vol 1, No 2, p 171

Laboratory-scale wireless transmission of microwave power approaches fifty-four percent efficiency. DC is converted to a 2.45-GHz signal and is transmitted through horn antenna array. Microwave signal is received at rectenna and is simultaneously collected and rectified back to dc at receiving sites. Dc is then processed for wired distribution

B76-10163**LONG BINARY FRAME SYNC WORDS**

B K Levitt
Aug 1976

NPO-13727

Vol 1, No 2, p 172

Prefixes of pseudonoise sequences for frame-synchronization of binary PSK telemetry require only small portion of sync words to be stored in memory

B76-10164**DEMODULATOR AIDS SYNCHRONIZATION**

M K Simon and J G Smith
Aug 1976

NPO-13605

Vol 1, No 2, p 172

Decision-feedback loop synchronizes multiple-amplitude and phase-shift keyed signals

B76-10165**ANALOG-TO-BINARY CONVERSION OF VIDEO DATA**

M H Acuna and C J Pellerin
Aug 1976

GSFC-11918

Vol 1, No 2, p 173

Accurate and controllable technique for converting television information to binary form has been developed for systems requiring video signals to be used with automatic data-processing equipment. High-speed comparator circuit ignores out-of-focus features and is insensitive to overall brightness changes in picture

B76-10166**DIGITAL VIDEO IMAGE SYSTEM**

P L Neely (Computer Sci Corp) and R M Brown (Computer Sci Corp)
Aug 1976

M-FS-23322

Vol 1, No 2, p 174

Interactive recording and display device acts as very-high-speed data-input/output interface between analog (video) signals and standard digital-computer components. System can be used

02 ELECTRONIC SYSTEMS

with various picture and memory sizes and can be controlled manually or by computer

B76-10167

INTERACTIVE IMAGING AND DATA PROCESSING

H Alsberg, R Nathan, and J H Morecroft

Aug 1976

NPO-13655

Vol 1, No 2, p 175

Image processing method is capable of contrast enhancement, noise filtering, and photometric distortion removal in near real time. System uses digital image integration and digital video recorder as image buffer. Each frame of data is entered into memory, registers provide readout of stored TV frame.

B76-10168

MULTIPLANE BINOCULAR VISUAL DISPLAY SYSTEM

W D Chase

Aug 1976

ARC-10808

Vol 1, No 2, p 176

Electro-optic system is interfaced with digital computer in flight simulator to generate simultaneous multiple-image planes in real time. System may have applications with other display and remote-control systems.

B76-10319

MANCHESTER TRANSITION TRACKING LOOP (MTTL)

A Cellier (TRW, Inc.), L N Ma (TRW, Inc.), and D C Huey (TRW, Inc.)

Jan 1977

MSC-14842

Vol 1, No 3, p 343

In new tracking loop, separate phase detection algorithm is incorporated for acquisition, programmed acquisition-to-track sequence includes automatic bandwidth switching. Additionally, system has very effective phase detection signal-to-noise ratio and can operate at any rate by changing master clock frequency. All system parameters remain constant.

B76-10320

INEXPENSIVE LOW-VOLTAGE SOLID-STATE ALARM

D H Hardy

Jan 1977

LEWIS-12644

Vol 1, No 3, p 344

Monitor/alarm with audio and visual warning output can be used to warn when prescribed limits of temperature, liquid level, pressure, or similar properties are exceeded. Device is more compact, lighter, and less expensive to manufacture than typical alarm circuits.

B76-10321

VOLTAGE-OFFSET REDUCTION IN DATA TRANSMITTERS

C E Theall (Singer Co.)

Jan 1977

MSC-14933

Vol 1, No 3, p 345

Current source, which consists of inductor and two silicon diodes, is used to reduce output voltage offset and to make circuit less sensitive to conductance differences in output transistors.

B76-10322

BINARY/BCD-TO-ASCII DATA CONVERTER

A J Miller

Jan 1977

GSFC-12044

Vol 1, No 3, p 346

Converter inputs multiple precision binary words, converts data to multiple precision binary-coded decimal, and routes data back to computer. Converter base can be readily changed without need for new gate structure for each base changeover.

B76-10323

PN RANGING/TELEMETRY TRANSMISSION

L F Deerkosky

Jan 1977

GSFC-12017

Vol 1, No 3, p 347

System can transmit range-indicating pseudonoise (PN) codes and simultaneously transmit auxiliary information as binary data at a rate at least on order of pseudonoise chipping rate. PN

code is modulated by data stream with relatively low bit rate. Data stream with high bit rate can be transmitted in same frequency band as PN ranging code.

B76-10324

RECEIVER PERFORMANCE EVALUATOR

J A Cusack (Motorola Inc.) and H R Meyering (Motorola Inc.)

Jan 1977

NPO-13701

Vol 1, No 3, p 348

Signal-to-noise ratio is estimated and bit errors in Manchester-encoded data streams are detected, using microprocessor-based test set.

B76-10325

CONCATENATED ALGEBRAIC DECODER

Innovator not given (Raytheon Co.) Jan 1977

MSC-14058

Vol 1, No 3, p 349

Technique for manipulating digital data consists of mating two separate coding/decoding methods to produce hybrid inner-code/outer-code system. Interactive digital circuitry is used to manipulate casually related digital data.

B76-10326

ORAL ANNUNCIATOR WITH PROGRAMMABLE VOCABULARY

D Paslay (Garrett Corp.) and P Wong (Garrett Corp.)

Jan 1977

MSC-14798

Vol 1, No 3, p 350

Voice (analog) signal is converted to its digital equivalent and stored in solid state memory. Upon command, memory becomes part of annunciator system which includes other digital logic, digital-to-analog converter, and audio amplifier.

B76-10327

SIGNAL PROCESSING AND DISPLAY FOR ELECTROCHEMICAL DATA

R N Young and J R Wilkins

Jan 1977 See also B73-10523

LANGLEY-11922

Vol 1, No 3, p 351

Two electrochemical electrodes provide signals, apparatus automatically determines reaction end point and displays lag period in time or cell concentration. Apparatus can be used with standard pH reference anode and platinum anode or with redox electrodes.

B76-10328

MICROPROGRAMMING FOR REAL-TIME DATA ACQUISITION

F J Patella (IBM)

Jan 1977

KSC-11027

Vol 1, No 3, p 352

Transmit microcode trap logic is conditioned by preset clock. Measurement request or issuance of command is controlled by set of software-initialized polling tables. Receive microcode trap logic is conditioned by transmit/receive hardware when response is returned on data bus.

B76-10329

SUBCARRIER SIGNAL COMBINER FOR ARRAYED ANTENNAS

H C Wilck and R A Winkelstein

Jan 1977

NPO-13723

Vol 1, No 3, p 353

Quadrature correlation for automatic signal phasing and variable delay is used to combine signals for improved signal-to-noise ratio.

B76-10330

PREVENTION OF DESIGN FLAWS IN MULTICOMPUTER SYSTEMS

J M Romberg (McDonnell-Douglas Corp.)

Jan 1977 See also NASA-CR-147657 (N76-23889)

MSC-14920

Vol 1, No 3, p 354

Report summarizes research on failure mode analysis for multicomputer systems where two or more computers may serve as redundant set. Failure modes such as data bus monopoliza-

tion, shutdown due to transients loss of control system equalization memory alteration, and software errors are discussed

B76-10473**DIRECT-READING INDUCTANCE METER**

R B Kolbly

Mar 1977

NPO-13792

Vol 1, No 4, p 527

Meter indicates from 30 nH to 3 micro H Reference inductor of 15 micro H is made by winding 50 turns of Number 26 Formvar wire on Micrometal type 50-2 (or equivalent) core Circuit eliminates requirement for complex instrument compensation prior to taking coil inductance measurement and thus is as easy to operate as common ohmmeter

B76-10474**VIDEO SIMULATOR WITH ELECTRONIC RANGING**

W Kraemer (Singer Co)

Mar 1977

MSC-14965

Vol 1, No 4, p 528

Gimbal orientation, raster shrinkage and deflection, and track movement are used to simulate attitude and range Key component in system is video digitizer that converts vidicon camera signal to digital form, processes it to reduce image size, and reconverts processed data to analog signal for display on cathode ray tube

B76-10475**INFRARED RANGE SENSOR**

J W Hill (Stanford Res Inst) and J R Woodbury (Stanford Res Inst)

Mar 1977

ARC-10885

Vol 1, No 4, p 529

Sensor employs triangulation technique to locate objects that lie in intersections of four emitted beams of light and fields of view of four phototransistors Signals from individual phototransistors are filtered and identified by individual synchronous detectors one for each beam-intersection point

B76-10476**IRONLESS-ARMATURE BRUSHLESS MOTOR**

R L Fisher (Sperry Rand Corp)

Mar 1977

GSFC-11880

Vol 1, No 4, p 530

Device uses 12-pole samarium cobalt permanent-magnet rotor and three Hall-effect sensors for commutation In prototype motor, torque constant (3-phase delta) is 65 oz-in/amp, electrical time constant (L/R) is 0.2 x 0.001 sec and armature resistance is 20 ohms

B76-10477**FULL-COLOR HYBRID DISPLAY**

W D Chase

Mar 1977

ARC-10903

Vol 1, No 4, p 531

System presents realistic and properly proportioned image of runway with its associated lights as it appears at dusk or at night Display employs high resolution cathode ray tube and color wheel to produce colored lights from computer generated signals Lights are then superimposed on conventional television display of runway

B76-10478**EFFECTS OF MISMATCH ON GROUP DELAY OF MICROWAVE TRANSMISSION**

R W Beatty and T Y Toshi

Mar 1977

NPO-13863

Vol 1, No 4, p 532

Calculation method can be applied to transmission lines operating in TEM mode or to single-mode propagation in waveguides Derived data are useful for estimating limits on variation of group delay with frequency or in determining how much discontinuity reduction is necessary to achieve given accuracy in predicting group delay

B76-10479**REDUCTION OF COMPUTER POWER INTERRUPTIONS**

C C Oleson (Rockwell Intern Corp)

Mar 1977

MSC-16136

Vol 1, No 4, p 533

Inexpensive latching relays incorporating one-second time delay prove effective for maintaining system power in place of computer facility automatic shutdown sensors that are activated by minute power surges or spikes in 60 Hz input signal

B76-10480**INSTRUMENTATION FOR MEASURING LOW-LEVEL CURRENTS/VOLTAGES**

R G Richmond

Mar 1977

MSC-14855

Vol 1, No 4, p 534

Instrumentation consists of high-output resistance voltage measuring amplifier (electrometer) and current-to-frequency converter (current digitizer) coupled to set of timers and counters Digital display of time-averaged signals with amplitudes varying over 11 decades is possible

B76-10481**TRACKING A PHASE-SHIFT-KEYED SIGNAL**

S Villarreal, S D Lenett, H S Kobayashi and J F Pawlowski

Mar 1977

MSC-16170

Vol 1, No 4, p 535

In detector, phase shifter is used to generate negative phase shift opposing detected phase angle This produces converted series sideband and component carrier with residual carrier signal and converted series sideband and component carrier added together to produce tracking signal

B76-10482**ADVANCED IMAGING COMMUNICATION SYSTEM**

E E Hilbert and R F Rice

Mar 1977

NPO-13545

Vol 1, No 4, p 536

Key elements of system are imaging and nonimaging sensors, data compressor/decompressor, interleaved Reed-Solomon block coder, convolutional-encoded/Viterbi-decoded telemetry channel, and Reed-Solomon decoding Data compression provides efficient representation of sensor data and channel coding improves reliability of data transmission

B76-10483**FLEXIBLE HIGH-SPEED INSTRUMENTATION SYSTEM**

F Bartoli and R W Borek Sr

Mar 1977

FRC-10110

Vol 1, No 4, p 537

Remote multiplexer/demultiplexer digital instrumentation system, which is suitable to both airborne and ground-based data acquisition/process control applications can be employed in a variety of research and flight test applications where great flexibility to accommodate changes in number of parameters, data sampling rates, and signal conditioning is required

B76-10484**INDUCTION MOTOR ANALYSIS**

G Bollenbacher

Mar 1977

LEWIS-12687

Vol 1, No 4, p 538

FORTTRAN program calculates torque speed characteristics electrical characteristics magnetic flux densities, and weight plus other parameters Input to program consists of physical dimensions, winding temperatures, winding description material characteristics, and electrical design parameters

03 PHYSICAL SCIENCES

B76-10030**LASER EXTENSOMETER**

03 PHYSICAL SCIENCES

P L Stocker (Rockwell Intern Corp) and H L Marcus (Rockwell Intern Corp)
Mar 1976

M-FS-19259 Vol 1, No 1, p 39
Drift-compensated and intensity-averaged laser-based system uses optical and photoelectric effects for precise measurement of small thermally-induced size changes Final output signal is directly proportional to size of sample shadow and independent of laser intensity detector dark current, and lateral motion of sample

B76-10031
LASER-DOPPLER MEASUREMENT OF AIR TURBULENCE
R M Huffaker
Mar 1976

M-FS-23155 Vol 1, No 1, p 40
Laser-Doppler system with 10-micron wavelength tracks 1-micron dust particles to measure air turbulence System is designed for use at airports to measure and track aircraft trailing vortexes

B76-10032
IMPROVED EINZEL LENSES
R K Hart (Georgia Inst of Tech)
Mar 1976

M-FS-23115 Vol 1, No 1, p 41
New insulator configuration simplifies construction of three-electrode electrostatic electron lenses in which center electrode is at high electrical potential Spherical sapphire insulators are used in lieu of conventional tubular ceramic or plastic insulators in Einzel lens assembly

B76-10033
STEPPING OPTICAL PATH DIFFERENCE IN AN INTERFEROMETER
R A Schindler
Mar 1976

NPO-13569 Vol 1, No 1, p 42
Stepping method permits higher amplitude modulation of secondary mirror of Fourier interferometer Amplitude of mirror motion is limited only by available voltage drive on error-correcting actuator Closed-loop controller provides servo error voltage linearly proportional to offset from proper null position Bidirectional counter serves to count number of reference laser fringes offset from null position

B76-10034
LIGHT PIPES FOR LED MEASUREMENTS
S R Floyd and E F Thomas, Jr
Mar 1976

GSFC-11887 Vol 1, No 1, p 43
Light pipe directly couples LED optical output to single detector Small area detector measures total optical output of diode Technique eliminates thermal measurement problems and channels optical output to remote detector

B76-10035
ELLIPSOMETER FOR MEASUREMENT IN ULTRAHIGH VACUUM
H U Walter, L A Wertzenkamp, and P N Peters
Mar 1976

M-FS-23130 Vol 1, No 1, p 44
Ellipsometer, used with ultrahigh vacuum, allows measurement of varied angles of incidence Vacuum chamber, directly incorporated into optical bench systems, allows varied angle measurements to be taken through same region of a window

B76-10036
CALIBRATION SOURCE FOR SENSITIVE OPTICAL DETECTORS
B T Baugh
Mar 1976

LANGLEY-11625 Vol 1, No 1, p 45
Light-emitting diode (LED), maintained near room temperature stabilizes wavelength of emitted light and calibrates photo-optical detectors

B76-10037
MEASUREMENT OF TRANSIENT REFLECTANCE
J M Zwiener
Mar 1976

M-FS-23160 Vol 1, No 1, p 46
Real-time reflectometer, adjusted to a fraction of a second monitors transient effects and allows sample to be exposed to environment continuously Reflectance and reference signals share same optical path, minimizing extraneous effects

B76-10038
IMPROVED COLLIMATOR FOR IMAGING SYSTEM
A M Holladay and C T Huggins
Mar 1976

M-FS-22863 Vol 1, No 1, p 47
System's collimator, consisting of metal plate with many small-diameter holes and fiber optics scintillator, can increase system resolution to 1 mm and reduce scintillation loss to 25 percent

B76-10039
HOLOGRAPHY WITH SURFACE PLASMA WAVES
J J Cowan (Natl Acad of Sci)
Mar 1976

M-FS-22040 Vol 1, No 1, p 48
New technique utilizes reflection-type diffraction grating of type generally used in grating spectrometers Grating is coated with thin layer of high-resolution recording medium, having absorption coefficient low enough to prevent incident light absorption before it is reflected by metal layer

B76-10040
BEAM PATTERNS OF LIGHT-EMITTING DIODES
E F Thomas, Jr and S R Floyd
Mar 1976

GSFC-11890 Vol 1, No 1, p 49
IR-sensitive film, placed at various source-to-detector distances, records output beam pattern of LED Information is then used to determine optimum position of detector surface for maximum radiation interception

B76-10041
IMPROVED INTERFEROMETER BEAM SPLITTER
R A Schindler
Mar 1976

NPO-11932 Vol 1, No 1, p 50
Cat's-eye retroreflector attached to motor driven lead screw allows low-frequency changes in optical path Moving-coil actuator attached to other retroreflector allows mid-frequency movements High-frequency movements are achieved by employing piezoelectric transducer attached to secondary mirror of same retroreflector

B76-10042
DETERMINATION OF RADIATIVE CURRENT IN LED'S
E F Thomas
Mar 1976

GSFC-12034 Vol 1, No 1, p 51
Directly measureable quantity of radiative output in LED's is total forward current When applied forward voltage is below 1.05 V the forward current is primarily nonradiative and varies with forward voltage as $\exp(qV/2kT)$, when q is the charge, V is applied voltage, K is Boltzmann's constant, and T is operating temperature

B76-10043
VOLTAGE CONTROL FOR CORONA CHARGING THERMOPLASTICS
R S Mezrich (RCA)
Mar 1976

M-FS-23102 Vol 1, No 1, p 52
Controlled voltage is accomplished by placing metal plate with hole in it near surface of film During charging, thermoplastic will accumulate charge only until it reaches plate voltage, after that, all charge will be deflected to plate

B76-10044
PERMANENT HOLOGRAPHIC STORAGE MEDIUM

R A Gange (RCA)
 Mar 1976

M-FS-22588 Vol 1, No 1, p 52
 Storage unit is electrostatically-charged multilayered laminate. Ability of system to store information in holographic forms is due to specific electrical, optical, and chemical characteristics of its materials

B76-10045
ELECTRODE STRUCTURE FOR UNIFORM CORONA DISCHARGE

R A Gange (RCA) and C C Steinmetz (RCA)
 Mar 1976

M-FS-22617 Vol 1, No 1, p 53
 Single corona-discharge needle is used to apply uniform charge to thermoplastic medium in holograph-storage system. Needle is connected to flat transparent electrode that is parallel to thermoplastic

B76-10046
ANAMORPHIC LENS FOR TRACKING SYSTEM

R H Burns and L F Schmidt
 Mar 1976

NPO-13062 Vol 1, No 1, p 54
 Lens has 2:1 focal-length ratio, consists of three spherical and two cylindrical elements, and is 7.6 cm in length. When used in conjunction with image dissector tube, expected root-mean-square noise equivalent angle is approximately 8 arc seconds

B76-10047
SOLAR SELECTIVE SURFACES

G McDonald, R W Lauver, P Baumeister (Rochester Univ.), and A C Benning (Harshaw Chem Co)
 Mar 1976

LEWIS-12614 Vol 1, No 1, p 55
 Method consists of applying high absorptance coating onto thin film or foil of low emittance material. Thin film surface is then bonded to collector panel surface

B76-10048
TWO-DIMENSIONAL PHOTON DETECTOR

J G Timothy (Harvard Coll Obs) and R L Bybee (Ball Bros Res Corp)
 Mar 1976

M-FS-23326 Vol 1, No 1, p 56
 Device incorporates set of cascaded microchannel-array plates in proximity focus with two sets of mutually-orthogonal linear anodes. Technique allows data from $N \times M$ picture elements to be recorded with only $N + M$ amplifiers

B76-10049
POLISHING TECHNIQUE FOR BERYLLIUM MIRROR

J F Froechtenigt (Martin Marietta Corp)
 Mar 1976

M-FS-22923 Vol 1, No 1, p 57
 Performance tests accomplished by inserting entire X-ray telescope and polished mirror into vacuum line 67 m long and taking photographs of an X-ray resolution source indicate that polishing increases mirror efficiency from 0.06 percent for X-rays at 0.8 nm and increases resolution from 15 to 3.75 arc-seconds

B76-10050
STANDARD AEROSOLS FOR PARTICLE VELOCIMETERS

A Deepark, R Ozarski and J A L Thomson
 Mar 1976

M-FS-23075 Vol 1, No 1, p 58
 System consists of laser-scattering counter (LSC) and photographic system. Photographic system provides absolute method of measuring aerosol size-distribution independently of their light scattering properties. LSC comprises 1-mW He/Ne laser input optics, collecting optics, photodetector, and signal-processing electronics

B76-10051 Vol 1, No 1, p 58
OPTICAL BIAS ASSEMBLY

R Weagant (Honeywell, Inc) and N Aldrich (Honeywell Inc)
 Mar 1976

MSC-14412
 Assembly used to achieve linear response in optical detection system consists of tungsten lamp source, optical filters, fiber optics bundle, aperture mask, relay lens, and folding mirror. Tungsten lamp source provides sufficient background illumination to make input optical flux small compared to background

B76-10052
VIDEO DISPLAY SYNTHESIZER

C Grant (Martin Marietta Corp)
 Mar 1976

MSC-14620 Vol 1, No 1, p 60
 Dc command voltages from analog computer can be displayed as four dots and two crosshairs configured to provide illusion of depth via planar or stereo presentations in monochrome or color and if stereo using dual monitors, single monitor with split screen or single monitor with color separation

B76-10053
MICROCHANNEL DETECTOR ARRAY FOR X-RAYS AND UV

J G Timothy (Harvard Coll Obs) and R L Bybee (Ball Bros Res Corp)
 Mar 1976

M-FS-23324 Vol 1, No 1, p 61
 Device employs sensitive photoelectric electrodes and solid-state memory can be used at visible UV and X-ray wavelengths, includes nonmagnetic proximity focusing, and is immune to high energy charged-particle background

B76-10054
VIDICON INTENSIFIER

R P Carpentier (Westinghouse Elec Corp), J P Pietrzyk (Westinghouse Elec Corp), R R Beyer (Westinghouse Elec Corp), and J S Kalafut (Westinghouse Elec Corp)
 Mar 1976

NPO-11912 Vol 1, No 1, p 62
 Computer-designed sensor, consisting of single-stage electrostatically-focused triode image intensifier provides high quality imaging characterized by exceptionally low geometric distortion, low shading, and high center-and-corner modulation transfer function

B76-10055
CALIBRATION OF IMAGE DISSECTOR TUBES

E E Klingman, III
 Mar 1976

M-FS-22208 Vol 1, No 1, p 63
 Technique employs computer-controlled light-emitting diode (LED), precision machined mask, and analog-to-digital converter (ADC). Computer turns on LED which floods masked face of tube. Intensity pattern, generated as tube is electromagnetically swept, is fed to ADC which controls tube calibration

B76-10056
HYBRID-MODE THERMIONIC CONVERTER

N S Rasor (Energy Res and Develop Admin) and E J Britt (Energy Res and Develop Admin)
 Mar 1976

HQN-10876 Vol 1, No 1, p 64

Converter's collector electrode has uniform low work-function surface and operates at sufficiently low temperature to produce negligible electron emission. Emitter electrode has main region which has intermediate work-function and auxiliary region which has relatively high work-function surface

B76-10057
CONVERT TECHNIQUE AND COMPUTER PROGRAM FOR CALCULATING PHOTOGRAPHIC FILM-DENSITY VARIATIONS

C W Ohlhorst
 Mar 1976

03 PHYSICAL SCIENCES

LANGLEY-11873

Vol 1, No 1, p 65

Binary-coded-decimal microdensitometer output is converted into number representing film-density difference between unexposed film border and any data point on photograph while also correcting for atmospheric backscattering and lens vignetting

B76-10169

DOUBLE-EXPOSURE HOLOGRAPHIC INTERFEROMETER

F R Livingston

Aug 1976

NPO-13796

Vol 1, No 2, p 179

Expensive optical-grade components in holographic interferometer are replaced with plastic test section and large-aperture spherical mirror to reduce distortions introduced by imperfections and cylindrical shape of plastic Instrument is used for shock-tube gas density studies and is adaptable to wind-tunnel studies of vehicle windshields and other testing

B76-10170

TWO-WAVELENGTH DYE LASER

E V Browell

Aug 1976

LANGLEY-12012

Vol 1, No 2, p 180

Double-pulse laser utilizes existing optical components in unique design and is used in DIAL (differential absorption LIDAR) experiments to remotely detect pollutant and trace gases in atmosphere It can be used with any double-pulsed pump laser or two single-pulse lasers that can be sequentially pulsed within short period of time

B76-10171

PHOTOREFRACTIVE PAGE COMPOSER

C M Verber (Battelle Mem Inst)

Aug 1976

M-FS-23419

Vol 1, No 2, p 181

Optical information-storage device is small, easy to operate, and has low optical losses Device utilizes optical system in which storage medium, a plate of photosensitive material changes its refractive index upon exposure to light Major design feature is that page-composer plate does not require complete erasure between scans

B76-10172

WIND VELOCITY MEASUREMENT

W C Cliff R M Huffaker, W K Dahm, T R Lawrence (Lockheed Missiles and Space Co) M C Krause (Lockheed Missiles and Space Co), and J S L Thomson (Phys Dyn Corp)

Aug 1976

M-FS-23362

Vol 1, No 2, p 182

Homodyne laser-Doppler system determines three-component wind velocity at altitudes of several kilometers in clear-air conditions There is no need for deployment of towers, radio-sondes or for seeding airflows

B76-10173

COMBINED GAAS LASER OUTPUTS

E M Rutz (IBM)

Aug 1976

M-FS-23397

Vol 1, No 2, p 183

Technique for combining outputs of array of small semiconductor lasers increases total output power while relaxing fabrication tolerances to make manufacture potentially less costly Advantage of free-running mode is that spacing between junction-diode lasers is less critical than for conventional, phase-coherently coupled arrays

B76-10174

AIRPORT LASER-DOPPLER

E W Coffey (Lockheed Missiles and Space Co), C E Craven (Lockheed Missiles and Space Co), B B Edwards (Lockheed Missiles and Space Co), C C Huang (Lockheed Missiles and Space Co), M C Krause (Lockheed Missiles and Space Co) T R Lawrence (Lockheed Missiles and Space Co), L K Morrison (Lockheed Missiles and Space Co), K R Shrider (Lockheed Missiles and Space Co), and D J Wilson (Lockheed Missiles and Space Co)

Aug 1976

M-FS-23423

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Vol 1, No 2, p 183

Laser system remotely senses and tracks aircraft-wake turbulence Other potential applications include long-range (remote) detection of airflow monitoring smokestack exit flow velocities and observing winds at altitude

B76-10175

ANALOG DATA RECORDING ON MNBI FILM

J E Guisinger and G W Lewicki

Aug 1976

NPO-13302

Vol 1, No 2, p 184

High coercive-force films have reduced sensitivity to wall-domain motion and can record at higher spatial frequencies Tracks switched in high coercive-force films have track widths independent of applied magnetic field Upper spatial frequency limit recorded by Curie-point switching in alternating field is greater

B76-10176

LOW-THRESHOLD LIGHT-EMITTING-DIODE LASER

F Z Hawrylo (RCA) and H Kressel (RCA)

Aug 1976

LANGLEY-11477

Vol 1, No 2, p 185

Technique, which consists of reducing bandgap change at heterojunction to 0.1 eV and avoiding deep-level impurities such as Si and Ge, produces low-threshold laser diodes which are made from (AlGa)As and emit in visible spectrum

B76-10177

BEAM SPLITTER/COMBINER

W Leeb (Natl Res Council)

Aug 1976

GSFC-12083

Vol 1, No 2, p 186

Device uses total internal reflection in wedge configuration to avoid interference caused by unwanted, stray reflected beams and is particularly suited for laser heterodyne systems uses in communications, radar, radiometry and spectroscopy

B76-10178

OPTICAL ALINEMENT SYSTEM

N L Thomas (Lockheed Missiles and Space Co)

Aug 1976

ARC-10932

Vol 1, No 2, p 187

Technique allows geometric center of light source, such as sun laser, or solar simulator, to be aligned with mirror quickly and in daylight Source is aligned by precisely superimposing colored images of source, as viewed along two different paths

B76-10179

FIELD DISTRIBUTION IN A THIN LENS

C H Chi (Perkin-Elmer Corp)

Aug 1976

LANGLEY-11392

Vol 1, No 2, p 188

Quasi-optical formulation gives an optical field distribution by computing only two terms First term represents geometrical optics effect, and second term represents diffraction effect, thus mathematical expression is simplified, and considerable computer time is saved

B76-10180

SIMPLIFIED DEFLECTION-COIL LINEARITY TESTING

G P Kramer (Sperry Rand Corp)

Aug 1976

M-FS-23400

Vol 1, No 2, p 189

Mask placed over face of image-dissecting photomultiplier tube has precision array of pinholes that permit light to impinge on tube at known points Signals are fed to deflection coil which sweeps beam across each point without complex operator procedures

B76-10181

CONTRAST ENHANCEMENT OF TRANSPARENCIES

A R Shulman and S H Lee (California Univ)

Aug 1976

GSFC-11989

Vol 1, No 2, p 190

System can enhance or reduce contrast of photographic transparency for printing or projection by using constructive and destructive interference of collimated laser beam. System is potentially less expensive than electronic CRT methods and is more accurate than trial-and-error manual techniques

B76-10182

FACETED SOLAR ENERGY COLLECTORS

D R Segna

Aug 1976

MSC-12687

Vol 1, No 2, p 191

Two concepts enhance efficiency and flexibility of solar collectors: faceting collector surface and adding coloring agent to working fluid. Collector can be placed on existing structures and oriented to take advantage of position of sun. By adding coloring agent to working fluid, total absorbance can be increased and altered if required.

B76-10183

DOUBLE-FOCUSING MASS SPECTROMETER

C E Giffin, A O Nier, and L M Sieradski

Aug 1976

NPO-13663

Vol 1, No 2, p 192

Device uses lighter, easily aligned, magnet assembly to provide field required to interact with ion beam. It has no separate duct; instead, evacuated duct is formed by pole pieces which support vacuum pump. Magnetic gap and magnet assembly are reduced from 4.64 to 2.54 mm and from 2.4 to 1.5 kg, respectively.

B76-10184

LOW-REFLECTIVITY SPECTRALLY SELECTIVE COATING

J J Zaniewski and H Herzog

Aug 1976

GSFC-12114

Vol 1, No 2, p 193

Mirror, with area of low reflectivity, replaces neutral-density transmission filter in star-tracking system, increasing reliability. It may have applications in other optical systems.

B76-10185

PULSE TRANSFORMER FOR GAAS LASER

E M Rutz (IBM)

Aug 1976

M-FS-23399

Vol 1, No 2, p 194

High-radiance gallium arsenide (GaAs) laser operating at room temperature is utilized in optical navigation system. For efficient transformer-to-laser impedance match, laser should be connected directly to pulse transformer secondary winding.

B76-10186

SOLAR THERMAL ENERGY UTILIZATION: A BIBLIOGRAPHY WITH ABSTRACTS

Innovator not given (New Mexico Univ.) Aug 1976

HQN-10900

Vol 1, No 2, p 195

Bibliographic series, which is periodically updated, cites documents published since 1957 relating to practical thermal utilization of solar energy. Bibliography is indexed by author, corporate source, title, and keywords.

B76-10187

OPTICS AND LASERS

Innovator not given Aug 1976 See also NASA-SP-5973(03)

HQN-10893

Vol 1, No 2, p 195

Report describes twenty-seven optical concepts developed for holographic viewing, spectral transmission, and film camera technology. Articles include developments in laser-Doppler systems, laser beam deflection controls, X-ray photography, and camera components.

B76-10188

OPTICAL DEVICES

Innovator not given Aug 1976 See also NASA-SP-5965(01)

HQN-10891

Vol 1, No 2, p 196

Report describes thirty concepts and techniques developed for optical instrumentation and light transmission and generation, including spectrometer components, telescopes, and microscopes and holographic cameras.

B76-10189

HYDROGEN ENERGY: A BIBLIOGRAPHY WITH ABSTRACTS

Innovator not given (New Mexico Univ.) Aug 1976

HQN-10898

Vol 1, No 2, p 196

Bibliographic series cites documents relating to use of hydrogen as energy carrier. In addition to cumulative volume, annual supplement is available for 1974, and quarterly update program serves 1975 and current calendar year.

B76-10190

SANDTRACKS: WORLD MAP AND STATIONS PREDICTIONS: COMPUTER PROGRAMS

R J Sandifer

Aug 1976

GSFC-12099

Vol 1, No 2, p 196

Computer program computes time history of subsatellite point and visibility from station to given satellite by integrating given epoch state.

B76-10331

LASER PARTICULATE SPECTROMETER

B A Boyd (McDonnell-Douglas Corp.) R M F Linford

(McDonnell-Douglas Corp.) and R J Schmitt (McDonnell-Douglas Corp.)

Jan 1977 See also NASA-CR-144375 (N75-29407)

MSC-14969

Vol 1, No 3, p 357

Hybrid laser scattering and extinction technique measures particle diameters from 0.8 to 2.75 micrometers and speeds from 0.2 to 20 m/s. Operating pressures range from ambient to ultra-high vacuum, and temperatures range from 77 to 300 K. Potential applications include air pollution, clean room, and particle size monitoring.

B76-10332

ECONOMICAL MEASUREMENT OF PARTICLE CONCENTRATION

W R McCluney

Jan 1977

GSFC-12088

Vol 1, No 3, p 358

Meter utilizes three optical systems to detect light scattered by particles in hydrosol at 2 deg and 90 deg simultaneously. Device has capability to detect relative amounts of organic and inorganic contaminants and, with proper calibration, to measure contribution of various species to changes in contamination levels in liquid mediums.

B76-10333

PINHOLE DIFFRACTION FILTER

B E Woodgate

Jan 1977

GSFC-12120

Vol 1, No 3, p 359

Multistage diffraction filter consisting of coaligned series of pinholes on parallel sheets can be used as nondegradable UV filter. Beam is attenuated as each pinhole diffracts radiation in controlled manner into divergent beam, and following pinhole accepts only small part of that beam.

B76-10334

A FORWARD-SCATTER POLARIMETER FOR CHEMICAL ANALYSIS

A L Fymat

Jan 1977

NPO-13756

Vol 1, No 3, p 360

Photopolarimeter measures two states of orthogonal polarization: parallel and perpendicular to scattering plane, defined by directions of incident and scattering light, to determine effective gaseous depolarization factor. Instrument can be used for environmental spectroscopic and meteorological analysis.

B76-10335

STABILIZED ND YAG LASER OUTPUT

J Osmundson

Jan 1977

GSFC-11571

Vol 1, No 3, p 361

Stabilization system consists of feedback-loop-controlled

03 PHYSICAL SCIENCES

piezoelectric crystal to one of the reflectors to vary optical path length within laser cavity. Average second harmonic of fundamental 1.06 micrometer laser radiation is detected by integrating detector

B76-10336

VACUUM-ULTRAVIOLET REFLECTOMETER

T H Allen (McDonnell-Douglas Corp.), C F Dillow (McDonnell-Douglas Corp.) and R M F Linford (McDonnell-Douglas Corp.)
Jan 1977

MSC-14995

Vol 1, No 3, p 362

Baffle, three-blade chopper, and split spherical mirror transmit alternating dual beam into integrating sphere. Alternating reference and sample beams are detected by high gain photomultiplier and modified logarithmic ratio meter. Device is useful in fusion research, high power laser work and spectrometer or monochromator construction

B76-10337

EXTERNAL HEATER FOR CRYOGENIC VESSELS

G J Wennagel (Grumman Aerospace Corp.)

Jan 1977

MSC-14056

Vol 1, No 3, p 363

When used in conjunction with nitrogen purge system, external heating film increases gas temperature, thereby preventing chilling of equipment. Proposed system includes vacuum-deposited layer of gold sandwiched between two layers of Mylar which act as carrier for film and prevent damage

B76-10338

OPTICAL PROFILOMETER

E E Burcher, W L Kelly, IV and S J Katzberg

Jan 1977

LANGLEY-11869

Vol 1, No 3, p 364

Device, consisting of optical scanning subsystem, two light detectors with associated amplifiers, analog divider, and adjustable nonlinear function generator, directly determines surface area, absolute depth, and point-to-point distance of three-dimensional object without physical contact with surface under observation

B76-10339

SELF-CALIBRATING RADIOMETER

J Dimeff

Jan 1977

ARC-10811

Vol 1, No 3, p 365

Instrument has differential thermocouples that measure temperature on two sides of receiver, one side is heated by absorbed radiation, the other by resistance heater. By measuring energy required to heat back surface, amount of energy absorbed on front may be determined

B76-10340

TUNABLE ACOUSTICAL OPTICAL FILTER

A L Lane

Jan 1977

NPO-13640

Vol 1, No 3, p 366

Solid state filter with active crystal element increases sensitivity and resolution of passive and active spectrometers. Filter is capable of ranging through infrared and visible spectra, can be built as portable device for field use, and is suitable for ecological surveying, for pollution detection and for pollutant classification

B76-10341

EFFICIENT COPPER-VAPOR PULSED LASER

G R Russell, N M Nerheim, and T J Pivrotto

Jan 1977

NPO-13449

Vol 1, No 3, p 367

High velocity flow is attained within system by expanding heated mixture of copper vapor, argon and helium through supersonic nozzle. Arc heater, operated on argon/helium mixture, supplies energy to vaporize copper and to produce high temperature supersonic flow of gas/vapor mixture

B76-10342

MEASURING SCATTER ANGLE FROM MIRRORS

Innovator not given (Perkin-Elmer Corp.) Jan 1977

M-FS-23421

Vol 1, No 3, p 368

Two instrumentation systems are used to measure scatter angle. Intensity scatterometer makes small angle measurements on order of 10 arc-minutes. Amplitude scatterometer which uses interferometric principle measures smaller angles on order of 10 arc-seconds. Both scatterometers use laser sources and can measure into ultraviolet (0.325 micron) wavelengths

B76-10343

HOLOGRAM-RECONSTRUCTION SIGNAL ENHANCEMENT

R S Mezrich (RCA)

Jan 1977

M-FS-23104

Vol 1, No 3, p 369

Principle of heterodyne detection is used to combine object beam and reconstructed virtual image beam. All light valves in page composer are opened and virtual-image beam is allowed to interfere with light from valves

B76-10344

MINIATURE CARBON DIOXIDE SENSOR

J Bordeaux (Beckman Instr., Inc.) and B D Henderson (Beckman Instr., Inc.)

Jan 1977. See also NASA-CR-144508 (N75-33375)

MSC-16009

Vol 1, No 3, p 370

Infrared absorption spectrometer with dual wave length monochromator has several valuable features: 3.4 by 1.6 inch size, accuracy within plus or minus 5% from 0 to 30 mm Hg, instantaneous and temperature-independent response time, negligible O₂ and N₂ effects and less than 0.5% water vapor effect, 2.5 W power consumption, no moving parts, and 1.5 and 30 mm Hg CO₂ in range

B76-10345

MONITOR FOR OPTICAL-WINDOW CONTAMINATION

L N Harnett (TRW, Inc.)

Jan 1977

ARC-10947

Vol 1, No 3, p 371

System uses window itself as principal element of well-known attenuated total reflection technique frequently used for spectroscopic analysis of thin films. Monitor includes notch in monitored window, which acts as beam splitter to reflect portion of light at less than critical angle and causes total internal reflection

B76-10346

COLOR TO BLACK-AND-WHITE CONVERTER

W E Perry

Jan 1977

MSC-12618

Vol 1, No 3, p 372

Lanthanum-modified lead zirconate titanate ceramic plate, when sandwiched between pair of conventional light polarizers, forms electrically controlled converter for television camera. Assembly can be used with camera at remote site to enable camera to transmit color or black and white signal on command

B76-10347

LOW-LIGHT-LEVEL INTEGRATING VIDEO SYSTEM

B J Duncan, T D Fay, E R Miller, W Wamsteker, R M Brown (Computer Sci. Corp.), and P L Neely (Computer Sci. Corp.)

Jan 1977

M-FS-23288

Vol 1, No 3, p 373

System consists of television camera using 25 mm SEC vidicon, low dispersion spectrograph, and digital video image system used for buffer storage of video data during tube readout scanning. Six-bit ADC converts video to digital data which are stored on magnetic tape for future evaluation

B76-10348

SHADOW MASK FOR X-RAY SPECTROMETER

B E Woodgate

Jan 1977

GSFC-12131

Vol 1, No 3, p 374

Imaging technique may be used in series with flat or conical Bragg crystals to separate spatial/spectral convolution when spectrometer is scanned across extended source emitting at

more than one wavelength. Technique allows line direction and continuum to be detected and provides data for spatial mapping of source

B76-10349

QUARTZ-CRYSTAL-OSCILLATOR HYGROMETER

R Kruger

Jan 1977

GSFC-12153

Vol 1, No 3, p 375

Measuring device, which eliminates complex and expensive optical components by electronically sensing dewpoint of water vapor in gas, employs piezoelectric crystal oscillator, supportive circuitry, temperature regulators, and readout

B76-10350

TERRESTRIAL PHOTOVOLTAIC MEASUREMENTS WORKSHOP

Innovator not given Jan 1977 See also NASA-TM-X-71802 (N76-71615)

LEWIS-12643

Vol 1, No 3, p 375

Workshop proceedings review basic methodology for measurements and calibration of solar cells. Also included are decisions concerning interim method for terrestrial solar cell measurements in order that results may be correlated between organizations doing solar cell research

B76-10351

WING CALCULATING LIGHTNING-INDUCED VOLTAGES IN ELECTRICAL CIRCUITS WITHIN AN AIRCRAFT WING

J A Plumer (GE)

Jan 1977

LEWIS-12108

Vol 1, No 3, p 376

Computer program based on Biot-Savart and Faraday laws utilizes model of generalized aircraft wing to calculate resistive and inductive transfer impedances relating lightning current flowing through wing to voltage induced in conductor within wing

B76-10485

ENERGY CONVERSION SYSTEM

C G Miller

Mar 1977 See also B75-10314

NPO-13510

Vol 1, No 4, p 541

Scheme based on chemical decomposition and recombination converts energy collected at relatively low temperatures (300 C) to higher temperatures required for efficient operation of steam-driven electrical generators. Approach uses one or more cyclical reversible chemical reactions in which compound is made to decompose and absorb thermal energy at low temperature by shifting equilibrium

B76-10486

IMPROVED SOLAR-ENERGY COLLECTOR

M K Selcuk

Mar 1977

NPO-13813

Vol 1, No 4, p 542

Fixed, but reversible, concentrator with vacuum tube receiver is fabricated from individual asymmetrical vee-shaped members having two sides, each of which presents different preselected slope angle to sun. Trough concentrator maintains year-round concentration factor of 2 (or better) for most significant collection period of day

B76-10487

ELECTROSTATIC-DISCHARGE IGNITION

J B Stephens and C G Miller

Mar 1977

NPO-13798

Vol 1, No 4, p 543

Electrode in cylinder permits charge to transfer during top dead center compression stroke in modified Otto-cycle engine. Charge transfer produces spark which causes ignition of droplets without resorting to other ignition devices which are incapable of igniting ultralean mixtures

B76-10488

HYDROFOIL CONTROLS OUTFALL EFFLUENTS IN RIVERS AND OCEANS

R C Costen

Mar 1977

LANGLEY-12045

Vol 1, No 4, p 545

System, which consists of vertical semispan hydrofoil anchored in water bed and set at angle of attack with respect to ambient water flow, works by keeping pollutants concentrated within long trailing vortex generated by hydrofoil and either deflecting vortex away from sensitive regions or sweeping it from side to side for rapid dispersion

B76-10489

PORTABLE, WIND SENSITIVE, DIRECTIONAL AIR SAMPLER

J N Deyo, R B King, and J Toma

Mar 1977 See also NASA-TM-X-71687 (N75-19623)

LEWIS-12743

Vol 1, No 4, p 546

Air Scout unit has preset timer that controls length of time filter slides are in sampling position. At end of sampling period, fresh slide is automatically moved into position and exposed filter is displaced into storage compartment. Device may be set up, loaded, programmed and left to acquire samples automatically

B76-10490

REMOTE SENSING OF VEGETATION AND SOIL

J B Schutt and S O Auer (NAS)

Mar 1977

GSFC-11976

Vol 1, No 4, p 547

Microwave ellipsometry apparatus reflects circularly polarized train of microwaves from vegetation at predetermined angle of incidence to determine ratio of intensities of electric field components and their phase differences. Refractive index given by water content of vegetation and thickness of vegetation layer are computed from formula based on Maxwell's equations

B76-10491

PORTABLE SOLAR RADIOMETER MEASURES STACK-PLUME EFFLUENTS

R J Exton and R W Gregory

Mar 1977 See also NASA-TN-D-8182 (N76-26718)

LANGLEY-12123

Vol 1, No 4, p 548

Radiometer features two optical arrangements: easy-to-align pointing optical system that is boresighted to second radiometric optical system which utilizes four filters to select wavelengths. Four channel device uses Sun as background source and measures attenuation of solar radiation through plume

B76-10492

REMOTE MOISTURE-CONTENT BALANCE

R A Blomseth, H Lum Jr., and Y Matsumoto

Mar 1977

ARC-11032

Vol 1, No 4, p 549

Automatic balance monitors wetness of wood samples to determine forest fire hazards. Fuel model consists of four wooden dowels that will absorb precipitation moisture and humidity at rate related to moisture absorption by forest wood. Model wetness is determined from weight changes as monitored by electronic balance

B76-10493

DATA SYSTEM FOR MULTIPLEXED WATER-CURRENT METERS

C R Ramsey (GE)

Mar 1977

M-FS-23343

Vol 1, No 4, p 550

Flow rates at 32 flood plain locations are measured simultaneously by single digital logic unit with high noise immunity. Water flowing through pygmy current meters rotates element that closes electrical contact once every revolution, so flow rate is measured by counting number of closures in time interval

B76-10494

DIFFERENTIAL-OPTOACOUSTIC ABSORPTION DETECTOR

M S Shumate

Mar 1977

NPO-13769

Vol 1, No 4, p 552

03 PHYSICAL SCIENCES

Two-cell spectrophone detects trace amounts of atmospheric pollutants by measuring absorption coefficients of gases with various laser sources. Device measures pressure difference between two tapered cells with differential manometer. Background signal is reduced by balanced window heating and balanced carrier gas absorption in two cells.

B76-10495 IMAGE INTENSIFICATION OF DEVELOPED PHOTOGRAPHS

B S Askins

Mar 1977

M-FS-23461

Vol 1, No 4, p 553

Autographic technique intensifies image on developed film using organic sulfur compound. Organic sulfur compound combines with silver on original film. Beta emission of compound exposes new film. Technique is less time consuming and safer than existing methods.

B76-10496 SOLVENT FOR 1-PHENYL-3-PYRAZOLIDONE IN PHOTOG- RAPHY

A R Shulman, R Shaffer (Computer Sci.-Technicolor Associates), and E L Shulman

Mar 1977

GSFC-11992

Vol 1, No 4, p 553

Dimethyl sulfoxide is shown to be capable of dissolving silver halide developers.

B76-10497 DC DRIVE SYSTEM FOR CINE/PULSE CAMERAS

R H Gerlach, J T Sharpsteen (Perkin-Elmer Corp.), C D Solheim (Perkin-Elmer Corp.), and L J Stoap (Perkin-Elmer Corp.)

Mar 1977 See also NASA-CR-147535 (N76-22510), NASA-CR-147759 (N76-25538)

MSC-16085

Vol 1, No 4, p 554

Camera-drive functions are separated mechanically into two groups which are driven by two separate dc brushless motors. First motor, a 90 deg stepper, drives rotating shutter, second electronically commutated motor drives claw and film transport. Shutter is made of one piece but has two openings for slow and fast exposures.

B76-10498 ELIMINATION OF COLOR RINGS ON FILM NEGATIVES

C M Fleetwood, Jr., S H Rice, and R S Spencer

Mar 1977

GSFC-12110

Vol 1, No 4, p 555

Abrasive grinding of glass surface, using grinding-grit size of 22.5 micron, prevents formation of interference ring during photoprocessing. To polish irregularities for improved light transmission, contact surface is bathed in aqueous solution of sulfuric acid and hydrofluoric acid.

B76-10499 HIGH-RESOLUTION ELECTRON MICROSCOPE

R Nathan

Mar 1977

NPO-13811

Vol 1, No 4, p 556

Employing scanning transmission electron microscope as interferometer, relative phases of diffraction maximums can be determined by analysis of dark field images. Synthetic aperture technique and Fourier-transform computer processing of amplitude and phase information provide high resolution images at approximately one angstrom.

B76-10500 SPATIALLY-COHERENT COUPLED SEMICONDUCTOR LASERS

E M Rutz (IBM)

Mar 1977

M-FS-23396

Vol 1, No 4, p 557

External cavity for monolithic array of three GaAs lasers phase-coherently couples individual outputs to produce single spatially coherent beam. Fourier-transform properties of lens and spatial filter are used to select coherent mode.

B76-10501

SPATIAL FILTER FOR Q-SWITCHED LASER

L O Heflinger (TRW, Inc.) and R F Wuerker (TRW, Inc.)

Mar 1977 See also NASA-CR-121264 (N74-18152)

LEWIS-12164

Vol 1, No 4, p 558

Set of compound lenses reduces ionization and sparks that frequently occur around pinhole aperture in spatial filter. Lens system produces astigmatic focus near pinhole, reducing energy level there below ionization threshold.

B76-10502

SERVO CORRECTS INTERFEROMETER-MIRROR TILT

R A Schindler

Mar 1977

NPO-13687

Vol 1, No 4, p 559

Three detectors sense He-Ne laser beam, one senses reference phase while others, at right angles to first, sense phase offset for each axis. Analog output of axis detectors is multiplied separately by reference output to give X and Y error signals that are then fed to respective X and Y actuators.

B76-10503

TEMPERATURE REFERENCE FOR MICROWAVE RADIOME- TER CALIBRATION

A W Love (Rockwell Intern Corp.), M J Vanmelle (Rockwell Intern Corp.), A C Jones (Rockwell Intern Corp.), and W N Hardy (Rockwell Intern Corp.)

Mar 1977

LANGLEY-11355

Vol 1, No 4, p 561

New temperature reference avoids need to physically remove antenna and replace it with calibrating termination. Device is piece of porous microwave absorber fitted with cap of nonporous plastic foam. Absorbent material is soaked with cryogen. Procedure ensures that temperature at which microwaves are absorbed is exactly that of cryogen.

B76-10504

X-RAY SENSITIVE OBLIQUE IMAGING DEVICE

K L Hallam and C B Johnson (Bendix Corp.)

Mar 1977 See also B73-10255

GSFC-11935

Vol 1, No 4, p 562

Instrument employs light reflecting surface (evaporated aluminum coating or minor substrate) behind phosphor screen to improve effective quantum efficiency in dual process. Fraction of incoming X-rays are converted to photoelectrons at photocathode, and X-rays that pass through photocathode and thin X-ray transparent membrane enter phosphor screen.

B76-10505

DUAL-PURPOSE HOLOCAMERA

L O Heflinger (TRW, Inc.) and R F Wuerker (TRW, Inc.)

Mar 1977 See also NASA-CR-121264 (N74-18152)

LEWIS-12166

Vol 1, No 4, p 563

Camera utilizes same basic structure to record bright-field holograms (single and double exposure interferograms) or, with minor adjustments, record forward scattered light holograms. Components that must be interchanged to convert camera can be mounted on sliding plate.

B76-10506

MAGNIFYING IMAGE INTENSIFIER

J Vine (Westinghouse Elec Corp.)

Mar 1977

GSFC-12010

Vol 1, No 4, p 564

Coil assembly for zoom operation produces axial magnetic flux density that decreases in strength from photocathode to target. This results in magnification factor greater than unity. To extend magnification range, field is reversed in direction between object and image planes.

B76-10507

DEVELOPMENT EPHEMERIS NUMBER 96

M S W Keesey, X X Newhall, and E M Standish, Jr

Mar 1977

NPO-14002

Vol 1, No 4, p 565

Program tape contains two files. File one contains all software.

necessary to create binary file and perform ephemeris calculation on that file, file two of distributed tape contains encoded ephemeris data. These data are essentially a blocked listing of complete dump of original binary tape with double precision data modified to special form

B76-10508
MULTISPECTRAL-SCANNER IMAGE PROCESSING

M I Stein
Mar 1977

GSFC-12135 Vol 1, No 4, p 566

QUIKLOOK program performs approximate geometric and radiometric corrections of LANDSAT multispectral-scanner digital data and calculates Earth rotation (skew) correction from format center latitude as given by annotation record of LANDSAT bulk computer-compatible tapes

B76-10509
MULTIDIMENSIONAL HEAT CONDUCTION

T C Connors, Jr (Rockwell Intern Corp) and L W Fesler (Rockwell Intern Corp)
Mar 1971

MSC-16159 Vol 1, No 4, p 566

Computer program computes transient temperature history or steady state solution for complex body geometries in three geometries. Program allows option of four methods of solution: forward difference method, midpoint difference (Crank-Nicholson) method, backward difference method, and alternating direction technique

B76-10510
GEODETTIC CONTROL NET

M E Davies (Rand Corp)
Mar 1977

NPO-13718 Vol 1, No 4, p 566

Computer program, originally developed for Mariner flyby missions, computes planetary control net from measurements of topographical features identified on television pictures. Program solves for areocentric coordinates of 115 surface points and orthogonal camera matrices of 57 far and near encounter pictures

B76-10511
ANALYSIS OF LASER HETERODYNE COMMUNICATIONS

S Cohen, S H Brewer (Hughes Res Labs), and T A Nussmeier (Hughes Res Labs)

Mar 1977

GSFC-12098 Vol 1, No 4, p 567

Computer program, which predicts effects of optical aberrations on transmitters and receivers, includes effects of Gaussian pupil functions and utilizes algorithm that permits specification of number and location of output points for computed spread function results

B76-10512
ACTIVE OPTICS SIMULATION SYSTEM

Innovator not given (Perkin-Elmer Corp) Mar 1977

LANGLEY-12104 Vol 1, No 4, p 567

Set of three major computer program packages aids design of mirror control system for large telescopes. It can be used to evaluate merit of particular active optics control system (or component subsystem), and once system configuration is chosen, it can be used as design aid to optimize system parameters

B76-10513
DIGITAL IMAGE-RECTIFICATION SYSTEM

P H VanWie, M I Stein, E Puccinelli, and B Fields
Mar 1977

GSFC-12156 Vol 1, No 4, p 568

System removes spatial distortions from data and brings data into conformance with Universal Transverse Mercator map projection, produces digital output products suitable for further machine processing and analysis, and fills need for geometrically corrected LANDSAT multispectral scanner digital data in several remote sensing application areas

04 MATERIALS

B76-10058 Vol 1, No 1, p 57

NOVEL AMINO BENZYL AND IMIDOBENZYL BENZENES

V L Bell, J R Pratt (Southern Mississippi Univ), and B L Stump (Virginia Commonwealth Univ)

Mar 1976

LANGLEY-11843

Compounds are useful as intermediates for several classes of polymers. Amines can function as cross-linking agents for epoxide and urethane polymers, as well as intermediates for synthesis of thermally-stable addition-type polyimides. Imide derivatives can be obtained by reacting amines with certain monoanhydrides containing olefinic unsaturation

B76-10059
ATMOSPHERIC PARTICLE SAMPLER

C G Miller and J B Stephens

Mar 1976

NPO-13396 Vol 1, No 1, p 68

Positive and/or negative pressure is used to trap airborne particles against a filter. Positive pressure is provided by low molecular weight gas (He or H₂) to achieve high particle velocity and high capture percentage. Trapped particles are examined under electron microscope

B76-10060
CONTINUOUS HCL IN AIR INDICATOR

R E Bartera and C G Miller

Mar 1976

NPO-13474 Vol 1, No 1, p 69

Steady stream of air is drawn into system and passes between light source and photocell. Incoming gases are sprayed with ammonia forming white cloud of NH₄Cl if any HCl is present

B76-10061
THERMAL FATIGUE-AND-OXIDATION-RESISTANT ALLOY

P T Bizon, W J Waters, and D A Spera

Mar 1976. See also B76-10062, NASA-TN-D-3597 (N66-34938), NASA-TN-D-8071 (N75-33429)

LEWIS-12564 Vol 1, No 1, p 70

Cast nickel-base alloy designated as NASA TAZ-8A has been developed for use in high temperature aircraft engine components. TAZ-8A composition is 8Ta, 6Cr, 6Al, 4Mo, 4W, 2Cb, 0.5Zr, 0.125C, 0.004B and balance Ni (weight percent). Its specific gravity at room temperature is 8.65

B76-10062
COMPARATIVE THERMAL FATIGUE RESISTANCE

P T Bizon and D A Spera

Mar 1976. See also B76-10061, NASA-TN-D-8071 (N75-33429)

LEWIS-12563 Vol 1, No 1, p 71

Nineteen cast nickel-base alloys, five cast cobalt-base alloys, and two wrought nickel-base alloys are included in study. Five nickel-base alloys have directionally-solidified polycrystalline grain structure. Three diffusion coatings and vapor-deposited overlay coating are also included in investigation

B76-10063
HYDROGEN CHLORIDE TEST SET

G L Workman (Athens Coll)

Mar 1976

M-FS-23357 Vol 1, No 1, p 73

Detector uses tertiary amine, which makes reaction fairly specific for relatively small highly polarized hydrogen chloride molecule. Reaction is monitored by any microbalance capable of measuring extremely small mass differences in real time

B76-10064
THERMAL INSULATION FOR HIGH-TEMPERATURE SYSTEMS

A J Parker (Hittman Associates, Inc)

04 MATERIALS

Mar 1976

GSFC-10954

Vol 1, No 1, p 74

Forty layers of 0.00064 cm platinum foil sprayed with zirconium during assembly, comprise laminated insulation with microquartz felt set into corners

B76-10065

POLYMERIC FOAMS STABLE AT HIGH TEMPERATURES

S R Riccitiello, E S Harrison (Whittaker Corp.), and C B Delano (Whittaker Corp.)

Mar 1976

ARC-11008

Vol 1, No 1, p 75

Crosslinked poly(N-arylenebenzimidazoles) are stable up to 370 C. Polymers are made by mixing appropriate stoichiometric amounts of tetramine and aromatic dicarboxylic acid anhydride with phenol or alkyl-substituted phenol

B76-10066

TRANSPARENT AND FLAME-RETARDANT POTTING COMPOUNDS

S L Lieberman (Furane Plastics, Inc.)

Mar 1976 See also NASA-CR-134234 (N74-21159), NASA-CR-134235 (N74-21160), NASA-CR-134236 (N74-21161), NASA-CR-134237 (N74-21162)

MSC-14669

Vol 1, No 1, p 76

Potting compounds include series of modified silicone RTV polymers and series of coreacted epoxy urethanes. Special properties are obtained by including Br, P, and N in polymeric structure

B76-10067

COATINGS FOR MULLITE INSULATION

P N Bolinger (GE) and H W Rauch, Sr (GE)

Mar 1976

LANGLEY-11150

Vol 1, No 1, p 76

Series of coatings provides hard, impermeable, waterproof layer. Inclusion of color oxides imparts high emittance to surface. Refractory fillers investigated include TiO₂, BaO ZrO₂, SrO TiO₂ zircon, spodumene, petalite, and kryptonite. Colorants include Cr₂O₃, NiO, and CoO

B76-10068

SPECIFIC-ION ELECTRODES FOR MEASURING AG IONS

J L Day and J M Walsh (Beckman Instr., Inc.)

Mar 1976

MSC-14906

Vol 1, No 1, p 77

Migration of aqueous solutions through electrode pellet, and thus corrosion of soldered connection, is prevented by coating pellet and silver wire attachment with silver-conductive epoxy

B76-10069

REDUCTION OF ACOUSTIC LOSSES BY OUTGASSING

E H Cirlin (Rockwell Intern Corp.), R M Housley (Rockwell Intern Corp.), and B R Tittmann (Rockwell Intern Corp.)

Mar 1976

MSC-15985

Vol 1, No 1, p 77

Heat treatment procedure at low pressure increases internal-friction quality factor of treated samples. Method can reduce propagation losses in porous ferroelectric ceramics by as much as a factor of 100

B76-10070

REDOX - ELECTROCHEMICAL ENERGY STORAGE

M Warshaw, L O Wright, and L A Thaller

Mar 1976 See also NASA-TM-X-71540 (N74-21688), NASA-TM-X-71805 (N75-32593)

LEWIS-12220

Vol 1, No 1, p 78

Rechargeable system, which operates at relatively low temperatures from room temperature to about 353 K, consists of analyte and catholyte storage tanks connected to flow cell

B76-10071

PASSIVE THERMAL-CONTROL COATINGS

T K Mookherji (Teledyne Brown Eng.) and J D Hayes (Teledyne Brown Eng.)

Mar 1976

M-FS-22794

Vol 1, No 1, p 79

Design engineer's handbook discusses passive temperature control techniques, selection of control surfaces and environmental damage mechanisms

B76-10072

HANDBOOK OF LIQUID METALS

A O Ukanwa (Howard Univ.)

Mar 1976

M-FS-23355

Vol 1, No 1, p 79

Metals are described by physical appearance followed by atomic weight, atomic number, and valence. Data include laboratory handling and safety procedures, heat transfer correlations, diffusion coefficients in liquid gallium/indium solution, melting and boiling points, thermal conductivity, heat capacity, and electrical resistivity

B76-10191

CHEMILUMINESCENT PREDICTION OF SERVICE LIFE

J A Hassell (Battelle Mem Inst.), G D Mendenhall (Battelle Mem Inst.), and R A Nathan (Battelle Mem Inst.)

Aug 1976 See also NASA-CR-147463 (N76-18276)

MSC-16010

Vol 1, No 2, p 199

Technique can be used to predict polymer degradation under actual expected-use conditions, without imposing artificial conditions. Smooth or linear correlations are obtained between chemiluminescence and physical properties of purified polymer gums

B76-10192

THERMOLUMINESCENCE FOR FORENSIC ANALYSIS

D D Lawson

Aug 1976 See also B76-10193

NPO-11607

Vol 1, No 2, p 200

Apparatus is used to determine commonality of origin of physical evidence

B76-10193

LOW-TEMPERATURE THERMOLUMINESCENCE

D D Lawson and J D Ingham

Aug 1976 See also B76-10192

NPO-11935

Vol 1, No 2, p 202

Technique for determining commonality of origin of materials is applicable to materials which are not solids at room temperature and heat-sensitive materials. Contamination of sample is avoided by using sealed sample cup. Technique is useful for determining origins of oil pollutants and has potential in mapping of lakes and/or oceans

B76-10194

SOLVENTLESS INTUMESCENT COATINGS

S Schwartz (Hughes Aircraft Co.)

Aug 1976 See also NASA-CR-137706 (N75-28228)

ARC-10996

Vol 1, No 2, p 203

Composition, requiring no hydrocarbon solvent, can be applied in smooth layers and molded or pressed into variety of shapes

B76-10195

THERMAL/ACOUSTICAL INSULATION FOAM

R Y Lin (Carborundum Co.) and E A Struzik (Carborundum Co.)

Aug 1976 See also NASA-CR-141498 (N75-15803)

MSC-14796

Vol 1, No 2, p 204

Lightweight low-density substance can be used as fire resistant insulation in aircraft. Material density can be controlled over range from 0.6-1.2 pounds per cubic foot and has good thermal and acoustic properties

B76-10196

COATING FOR SOLAR PANELS

R W Gumbs (R Gumbs Assoc.)

Aug 1976

M-FS-23420

Vol 1, No 2, p 205

Inexpensive composition with high energy-absorptivity and low emissivity requires no primers for adhesion to aluminum,

copper, and stainless steel and uses commercially available materials

B76-10197

IMPROVED INSULATION MATERIAL

Innovator not given (Beech Aircraft Corp) Aug 1976

MSC-14642

Vol 1, No 2, p 205

Multilayer material consisting of embossed, silver-coated Mylar, Nylon net, and silk net is useful for thermal-protection systems and cryogenic containers. Embossing serves two purposes: helps separate radiation barriers and controls radiant energy diffusion. Insulation requires no maintenance after installation.

B76-10198

AUTOMATED SOLVENT CONCENTRATOR

J S Griffith and J L Stuart

Aug 1976 See Also B76-10199 B76-10200

NPO-13068

Vol 1, No 2, p 206

Designed for automated drug identification system (AUDRI) device increases concentration by 100. Sample is first filtered removing particulate contaminants and reducing water content of sample. Sample is extracted from filtered residue by specific solvent. Concentrator provides input material to analysis subsystem.

B76-10199

PRECOLUMN FOR EXTRACT CONCENTRATION

V J Jahnsen and W G Bloom

Aug 1976 See also B76-10198, B76-10200

NPO-13083

Vol 1, No 2, p 207

AUDRI requires test sample separation into organic compound families for subsequent insertion into several parallel chromatographs. Sample is first extracted by selective organic solvents. Solvent is then removed from extract to increase extract-to-solvent ratio increasing system sensitivity. Backflushing of precolumn serves as cleanser.

B76-10200

FRACTION-STORAGE UNIT FOR DRUG-IDENTIFICATION SYSTEM

C F Campen and J L Stuart

Aug 1976 See also B76-10198 B76-10199

NPO-13111

Vol 1, No 2, p 208

Device, connecting outputs of all gas chromatographs to single, relatively inexpensive IR spectrometer reduces costs of system. Storage unit provides buffer storage of samples until infrared spectrometer is ready to accept them. Storage unit can be used to separate overlapping peaks.

B76-10201

ABRASION-RESISTANT COATINGS FOR PLASTIC SURFACES

T J Wydeven and J R Hollahan (Tegal Corp)

Aug 1976 See also B73-10507

ARC-10915

Vol 1, No 2, p 210

Optically clear composition of organosilicon compounds insulates plastic surfaces and protects them from abrasion. Plasma polymerization process produces superior uniformity and clarity than previous coating techniques.

B76-10202

GROWING CRYSTALS FROM EUTECTIC MELTS

B N Bhat (Nat'l Res Council)

Aug 1976

M-FS-22926

Vol 1, No 2, p 210

Inverted Bridgman Method yields crystals of higher homogeneity and better structure than those grown by ordinary Bridgman method. Process controls thermotransport by holding molten alloy in known temperature for known period of time. Rapid cooling quenches in state of segregation. Method is applicable to other eutectiferous systems where thermotransport is appreciable.

B76-10203

COMPRESSED AIR CYLINDER PALLET

K G Highley (Rockwell Intern Corp)

Aug 1976

MSC-19217

Vol 1, No 2, p 211

Device simultaneously handles up to twenty standard size, compressed air cylinders with improved safety.

B76-10204

PYROIONIC INFRARED DETECTOR

A Sher (William and Mary Coll)

Aug 1976

LANGLEY-11921

Vol 1, No 2, p 212

Device functions near room temperature and is not sensitive to vibrations.

B76-10205

SEPARATION OF WATER FROM AIR SAMPLES

B J Tyson and G C Carle

Aug 1976

ARC-10890

Vol 1, No 2, p 213

Gas chromatograph with sorbitol column, used in a three-part system separates collected water from preconcentrated air samples.

B76-10206

VAPOR CORROSION INHIBITORS

L A Bielman (Rockwell Intern Corp)

Aug 1976

M-FS-19232

Vol 1, No 2, p 213

Report describes effectiveness and materials compatibility of amine nitrites. Particularly of value to those interested in long-term corrosion protection.

B76-10352

FRACTION COLLECTOR FOR ELECTROPHORESIS

M Bier (Veterans Admin Hosp, Tucson, Ariz)

Jan 1977

M-FS-23459

Vol 1, No 3, p 379

Rotating-tube electrophoresis apparatus employs rotating jet of eluting buffer to reduce effects of convection during separation. Designed for separation of microorganisms and biological species. System combines gravity/gradient compensating of lumen with buffer flush at fraction outlet to increase separation efficiency.

B76-10353

MOLECULAR BEAM GENERATOR

R G Richmond, T H Allen (McDonnell-Douglas Corp), R M F Linford (McDonnell-Douglas Corp), and J E Wittman (McDonnell-Douglas Corp)

Jan 1977 See also NASA-CR-144376 (N75-29135)

MSC-14996

Vol 1, No 3, p 380

Vacuum deposition generator has nozzle and aperture designed especially for beams of heavy organic molecules. Deposition rates are from 6 to 15 angstroms per minute.

B76-10354

CATALYTIC OXIDATION OF WASTE MATERIALS

R B Jagow (Lockheed Missiles and Space Co)

Jan 1977

MSC-14831

Vol 1, No 3, p 381

Aqueous stream of human waste is mixed with soluble ruthenium salts and is introduced into reactor at temperature where ruthenium black catalyst forms on internal surfaces of reactor. This provides catalytically active surface to convert oxidizable wastes into breakdown products such as water and carbon dioxide.

B76-10355

COMPOSITE LAMINATE WARPAGE

C C Chamis

Jan 1977 See also NASA-TM-X-71619 (N75-11048)

LEWIS-12615

Vol 1, No 3, p 382

Set of simplified equations predicts warpage that often occurs upon removal from fabrication mold. Equations predict corner deflection and are based upon micromechanics and macromechanics of composites, as well as laminate theory. Factors considered

04 MATERIALS

include ply misorientation fiber migration, and void/volume ratio nonuniformity

B76-10356

DETERMINATION OF TRACE AMOUNTS OF POF3

J N Foster (Rockwell Intern Corp)
Jan 1977

LEWIS-10577

Vol 1, No 3, p 383

Approach takes advantage of fact that phosphorous oxyfluoride (POF3) and phosphorous oxychloride (POCl3) both belong to same molecular symmetry group and should have extinction coefficients that are approximately the same Extinction coefficient of reagent-grade POC13 is measured and this coefficient is employed to calculate POF3 concentrations

B76-10357

FLAME-RESISTANT ELASTOMERIC POLYMERS

J T Howarth (Little/Arthur D/, Inc) S G Sheth (Little/Arthur D/, Inc) and K R Sidman (Little/Arthur D/, Inc)
Jan 1977 See also NASA-CR-144362 (N75-29264)

MSC-16078

Vol 1, No 3, p 384

Family of polymer formulations, which has limiting oxygen indices from 50 to 100, can be extruded through dies to produce elastic fibers compression molded, dissolved in solvents as required for coatings, and calendered to produce film and embossed sheeting Applications include upholstery, paint products, automobile products, and coated fabrics

B76-10358

ENAMEL FOR HIGH-TEMPERATURE SUPERALLOYS

H Levin (Hughes Aircraft Co) and W E Lent (Hughes Aircraft Co)
Jan 1977

M-FS-22804

Vol 1, No 3, p 385

Desired optical and high temperature enamel properties are obtained with glasses prepared from the system $\text{Li}_2\text{O}-\text{ZrO}_2-n\text{SiO}_2$ Molar compositions range from $n=4$ to $n=13$, to which are added minor amounts in varying combinations of alumina, alkali fluorides boric oxide, alkali oxides, and alkaline earth oxides

B76-10359

SECOND-GENERATION PMR POLYIMIDES

T T Serafini, R D Vannucci and W B Alston (USAAMRDL)
Jan 1977 See also NASA TM-X-67803 (N71-23367), NASA-TM-X-71616 (N74-34960) NASA-TM-X-71816 (N76-11289), NASA-TM-X-71894 (N76-21337), NASA-TN-D-6877 (N72-29598)

LEWIS-12738

Vol 1, No 3, p 386

Continuing research has resulted in development of polyimides with improved thermo-oxidative stability at 589 K Polyimides are based on dimethyl ester of 4,4'-(hexafluoro-isopropylidene)-bis(phthalic acid) (HFDE) and p-phenylenediamine (PPDA) and NE

B76-10360

PURITY TEST FOR COPPER-PLATING SOLUTIONS

F B Mansfeld (Rockwell Intern Corp)
Jan 1977

M-FS-19298

Vol 1, No 3, p 387

Electrode configuration can be used to measure extent of impurities in acid-copper plating solution It can be inserted into any plating tank and will show whether bath is clean or contaminated, within fifteen minutes

B76-10361

EXPERIMENTAL DATA FOR NEW FIRE-RETARDANT MATERIALS

D E Supkis
Jan 1977 See also NASA-TM-X-58165 (N76-13040)

MSC-16022

Vol 1, No 3, p 388

Report contains evaluations of flammability and physical properties of twenty-four upholstery and furnishing materials, such as those used in commercial aircraft Data presented include degradation upon heating, limited oxygen indices, smoke generation, flammability afterglow, and char length

B76-10514

EXTRACTING LIGNINS FROM MILL WASTES

M F Humphrey
Mar 1977

NPO-13847

Vol 1, No 4, p 571

Addition of quaternary ammonium compound and activated charcoal to pulp and mill wastes precipitates lignins in sludge mixture Methanol dissolves lignins for separation from resulting slurry Mineral acid reprecipitates lignins in filtered solution Quaternary ammonium compound, activated charcoal as well as water may be recovered and recycled from this process

B76-10515

EXTRACTION OF UREA AND AMMONIUM ION

R T Anselmi (Martin Marietta Corp) R R Husted (Martin Marietta Corp), and J R Schulz (Martin Marietta Corp)
Mar 1977 See also NASA-CR-137596 (N75-13537)

ARC-11064

Vol 1, No 4, p 572

Water purification system keeps urea and ammonium ion concentration below toxic limits in recirculated water of closed loop aquatic habitat Urea is first converted to ammonium ions and carbon dioxide by enzymatic action Ammonium ions are removed by ion exchange Bioburden is controlled by filtration through 0.45 micron millipore filters

B76-10516

LESS-COSTLY ACTIVATED CARBON FOR SEWAGE TREATMENT

J D Ingham, J J Kalvinskis, and W A Mueller
Mar 1977

NPO-13877

Vol 1, No 4, p 573

Lignite-aided sewage treatment is based on absorption of dissolved pollutants by activated carbon Settling sludge is removed and dried into cakes that are pyrolyzed with lignites to yield activated carbon Lignite is less expensive than activated carbon previously used to supplement pyrolysis yield

B76-10517

SURFACTANT-ASSISTED COAL LIQUEFACTION

G C Hsu
Mar 1977

NPO-13904

Vol 1, No 4, p 574

Improved process of coal liquefaction utilizing nonaqueous surfactant has increased oil yield from 50 to about 80% Asphaltene molecule formation of colloid particles is prevented by surfactant Separated molecules present more surface area for hydrogenation reaction Lower requirements for temperature pressure and hydrogen lead to reduction in capital and operation costs

B76-10518

MEMBRANE HAS HIGH UREA-REJECTION PROPERTIES

C C Johnson and T J Wydeven
Mar 1977

ARC-10980

Vol 1, No 4, p 575

Membranes are synthesized from ethylene and nitrogen in RF plasma at low power, gas-flow rates, and pressure Ethylene and nitrogen are used because flow rate and partial pressure of each gas can be independently controlled to produce optimum conditions for synthesizing membrane Membrane is particularly useful in recycling and purifying water

B76-10519

CATALYSTS FOR LOW-ENERGY ALDEHYDE PROCESSES

A Gupta, A Rembaum, C Frazier (Caltech), and H B Gray (Caltech)
Mar 1977

NPO-13827

Vol 1, No 4, p 576

Photochemical reaction of dicobalt octacarbonyl with polymeric support systems results in formation of polymer bonded metal catalyst Catalyst is used in hydroformylation (addition of carbon dioxide and hydrogen) of olefins to yield aldehydes

B76-10520

DETERMINING EUTECTIC COMPOSITION IN METAL ALLOYS

R L Ashbrook and Y G Kim (Intern Nickel Co)

Mar 1977 See also NASA-TM-X-71765 (N75-29243)

LEWIS-12633 Vol 1, No 4, p 577

Tube crucible and furnace are used to separate eutectic mixture from trial-melt ingot. As ingot is slowly heated to melting point, initial surface melting will be eutectic mixture. Molten metal is collected at bottom of crucible, where it is solidified.

B76-10521

DETERMINING TOTAL CARBON IN HYDRAZINE

E E Davis (Bendix Corp)

Mar 1977

KSC-11022 Vol 1, No 4, p 578

Procedure incorporates modified pyrolysis train. Samples are vaporized before entering furnace to be pyrolyzed at 850 C + or - 25 C. Direct collection of pyrolyzed gas reduces loss of carbon dioxide. Infrared spectroscopy can be used to analyze samples for carbon dioxide content.

B76-10522

NEW DIAMINE HARDENERS FOR EPOXIES

V L Bell and T L StClair

Mar 1977 See also NASA-CR-145022 (N76-28424)

LANGLEY-11823 Vol 1, No 4, p 579

Stronger amine-cured polyepoxides can be obtained by using those diaminobenzophenones and diaminodiphenylmethanes that have amine groups located at ortho or meta positions to carbonyl or methylene groups joining two benzene rings.

B76-10523

ELECTROLYTE CELLS MEASURE OXYGEN FUGACITIES

R J Williams and O Mullins (Lockheed Electronics Co)

Mar 1977 See also NASA-TM-X-58167 (N76-18246)

MSC-16089 Vol 1, No 4, p 580

System that uses calcia-stabilized zirconia-ceramic electrolyte in oxygen concentration cell can directly measure oxygen fugacity in vertical-quench furnace, redox-control system. System can independently vary temperature and oxygen fugacity during experiments and can record these parameters as function of time.

B76-10524

NUCLEATION OF ELECTRONIC-CRYSTAL REGIONS

E C Henry (GE), B A Noval (GE), and D R Ulrich (GE)

Mar 1977

M-F S-23409 Vol 1, No 4, p 581

Technique of improved ceramic-oxide crystal growth utilizes high viscosity solutions (glass or fused solvent). Compositions are selected on basis of technical importance, gravity sensitive properties, and apparent compatibility. Seeded fused-solvent technique uses bismuth germanate, lithium niobate or lead germanate.

B76-10525

VISCOELASTIC FOAM CUSHION

C C Kubokawa and C Yost (Dyn Systems Inc)

Mar 1977 See also B72-10692 B73-10495

ARC-11089 Vol 1, No 4, p 582

Foam is viscous and elastic with unusual and useful temperature, humidity, and compression responses. Applied weight and pressure distributed equally along entire interface with foam eliminates any pressure points. Flexible urethane foam is ideal for orthopedic and prosthetic devices, sports equipment, furniture, and crash protection.

B76-10526

STRESS-CORROSION CRACKING DUE TO HYDRAZINE

M J Adamson and W P Gilbreath

Mar 1977

ARC-11093 Vol 1, No 4, p 583

Stress corrosion cracking susceptibility in presence of hydrazine is examined for 6061-T6, Ti-6Al-4V(STA), Inconel 718, 410 stainless steel and 4130 steel alloys.

B76-10527

MULTISPECIES TRANSIENT SIMULATOR

A L Lee (Lockheed Missiles and Space Co)

Mar 1977

MSC-14862

Vol 1, No 4, p 583

Computer program predicts transient pressure variation of multispecies gases in large vacuum systems composed of interconnecting compartments.

B76-10528

MULTILAYER INSULATIVE SYSTEMS

K L Brinkley and C M Pittman

Mar 1977

LANGLEY-12057

Vol 1, No 4, p 583

One dimensional numerical analysis of transient thermal response multilayer insulative system determines temperature distribution through system consisting of one to four layers. Program based on this analysis will determine thickness of specified layer that will satisfy specified temperature-limit criterion at any point in insulative system.

B76-10529

RAPID KINETICS

A G McLain and C S R Rao (Old Dominion Univ)

Mar 1977

LANGLEY-12140

Vol 1, No 4, p 584

Hybrid program for chemical kinetics provides rapid solution to problems involving flowing or static, chemically reacting, gas mixtures.

05 LIFE SCIENCES

B76-10073

QUANTITATIVE BIOLUMINESCENT DETECTION OF BACTERIA

E W Chappelle and G L Picciolo

Mar 1976

GSFC-12003

Vol 1, No 1, p 81

Phosphoflavins in sample are measured using photobacterial luciferase assay technique for flavin mononucleotide (FMN). Boiling perchloric acid is used to rupture cells to free bound flavin and to hydrolyze flavin adenine dinucleotide to FMN. Base-stabilized water solution of sodium borohydride is used as reactant.

B76-10074

EXERCISE SUPPORT FOR THERAPY

M J Long and S C Inck

Mar 1976

LANGLEY-11975

Vol 1, No 1, p 82

Constant-value weight-relieving apparatus, which moves on rollers on overhead track, supports weight of walking, stooping, squatting, or standing patient with combination of multiple pulleys and spring clusters. Individually preselected support force is constant for all movements.

B76-10075

MYOCARDIAL WALL-THICKNESS TRANSDUCER

C Feldstein, G W Lewis, R H Silver and V H Culler

Mar 1976

NPO-13644

Vol 1, No 1, p 83

Device consists of highly compliant circular beam attached to piezoresistive strain gage and barbed needle. Radial deflection of myocardium is measured with minimal disturbance of normal heart functions.

B76-10076

LIGHTWEIGHT ORTHOTIC APPLIANCES

R M Baucom and T L St Clair

Feb 1976

LANGLEY-11918

Vol 1, No 1, p 84

Graphite-filament reinforced polymer materials are used in applications requiring high tensile strength and modulus. Superior properties of graphite composite materials permit fabrication of

05 LIFE SCIENCES

supports that are considerably lighter, thinner, and stiffer than conventional components

B76-10077

REMOTE, UNATTENDED, FOREST FIRE DETECTOR

D J Winslow

Mar 1976

M-FS-21221

Vol 1, No 1, p 85

Instruments for land tract scanning and fire detection include temperature sensor capable of detecting distant match flame, elevated television camera with automatic controls for light balance position, filter, and focus and scanner equipped with photocell to sense intensity of flying spot brought to it by sweep-and-scan mechanism

B76-10078

PROTON TISSUE DOSE

J W Wilson and G S Khandelwal (Old Dominion Univ)

Mar 1976

LANGLEY-11802

Vol 1, No 1, p 85

Program calculates dosage averaged over five major segments of blood-forming organ treating human body geometry in detail but assuming isotropicity of incident primary particles. Approximate form of transport theory is used incorporating nuclear star effects. Two numerical integrations are used to evaluate intermediate equation and then dosage equation

B76-10207

OCCLUSIVE-CUFF CONTROLLER

J T Baker (Technol Inc), G W Hoffer (Technol Inc), and W Hursta

Aug 1976

MSC-14836

Vol 1, No 2, p 217

Device can be automatically set to supply desired amount of pressure for given time and may be triggered manually or from patient's electrocardiograph

B76-10208

FIREFLIGHTER'S BREATHING SYSTEM

P B McLaughlin, E A Gorgini (Scott Aviation), J L Sullivan (Scott Aviation), M R Simmonds (Scott Aviation), and E J Beck (Martin Marietta Corp)

Aug 1976

MSC-14733

Vol 1, No 2, p 218

System, based on open-loop demand-type compressed air concept, is lighter and less bulky than former systems, yet still provides thirty minutes of air supply. Comfort, visibility, donning time, and breathing resistance have been improved. Apparatus is simple to recharge and maintain and is comparable in cost to previously available systems

B76-10209

MANUAL DEXTERITY EVALUATOR

H P Bergeron, J D Holt, and P A Gainer

Aug 1976

LANGLEY-12022

Vol 1, No 2, p 219

Device incorporates relatively inexpensive, simple hand-controlled tracker that moves over horizontal two-dimensional surface. Device is applicable as a two-dimensional or three-dimensional plotter to perform as X/Y curve plotter, area calculator under a randomly shaded curve, and displacement tracker

B76-10210

ASEPTIC FLUID-TRANSFER SYSTEM

J C Arnett, R M Berkman, and E L Cleland

Aug 1976

NPO-13743

Vol 1, No 2, p 220

Inexpensive storage and transfer system allows blood and other fluids to be added or removed without contamination. Device heat-sterilizes external surfaces of terminals and forms sterile passageway between terminals

B76-10211

GRAPHITE-REINFORCED BONE CEMENT

A C Knoell

Aug 1976

NPO-13764

Vol 1, No 2, p 221

Chopped graphite fibers added to surgical bone cement form bonding agent with mechanical properties closely matched to those of bone. Curing reaction produces less heat, resulting in reduced traumatization of body tissues. Stiffness is increased without affecting flexural strength

B76-10212

PHYSICIAN'S MODERN 'BLACK BAG'

C K Lapinta, J L Day, A E Schulze (Telecare Inc), and G A Zivley (Telecare, Inc)

Aug 1976

MSC-14936

Vol 1, No 2, p 222

Physician's capabilities for on-site treatment are expanded by lightweight compact medical kit, which contains practically all instrumentation of well-equipped medical office

B76-10213

BIRTH/DEATH PROCESS MODEL

C B Solloway and W Wakeland (Harvey Mudd Coll)

Aug 1976

NPO-13616

Vol 1, No 2, p 224

First-order Markov model developed on digital computer for population with specific characteristics. System is user interactive, self-documenting, and does not require user to have complete understanding of underlying model details. Contains thorough error-checking algorithms on input and default capabilities

B76-10362

MEASURING MANDIBULAR MOTIONS

J Dimeff, S Rositano, and R C Taylor (California Univ)

Jan 1977

ARC-10956

Vol 1, No 3, p 391

Mandibular motion along three axes is measured by three motion transducers on floating yoke that rests against mandible. System includes electronics to provide variety of outputs for data display and processing. Head frame is strapped to test subject's skull to provide fixed point of reference for transducers

B76-10363

DISPOSABLE BIOMEDICAL ELECTRODE

J D Frost Jr (Methodist Hosp, Houston, Tx) and C E Hillman, Jr (Methodist Hosp, Houston, Tx)

Jan 1977 See also B76-10642 B76-10364

MSC-14623

Vol 1, No 3, p 392

Reusable recording cap equipped with compressible snap-on bioelectronic electrodes is worn by patient to allow remote monitoring of electroencephalogram and electro-oculogram waveforms. Electrodes can be attached to inside surface of stretch-textile cap at twelve monitoring positions and at one or two ground positions

B76-10364

AUTOMATED EEG ACQUISITION

J D Frost Jr (Methodist Hosp, Houston, Tx) and C E Hillman, Jr (Methodist Hosp, Houston, Tx)

Jan 1977 See also B76-10363, NASA-CR-147554 (N76-22888)

MSC-16111

Vol 1, No 3, p 393

Automated self-contained portable device can be used by technicians with minimal training. Data acquired from patient at remote site are transmitted to centralized interpretation center using conventional telephone equipment. There, diagnostic information is analyzed, and results are relayed back to remote site

B76-10365

REMOTE WATER-MONITORING SYSTEM

D C Grana and D P Haynes

Jan 1977

LANGLEY-11973

Vol 1, No 3, p 395

General-purpose, water-quality sampling process detects microorganisms and integrates sampling, sample preservation, and sample analysis. System overcomes difficulties in correlation of surface measurements with remote measurements and minimizes human error in handling of samples and instrumentation

B76-10366**ROCKING-MOTION SENSOR FOR THE BLIND**

A Mandell, J E Morgan (Martin Marietta Corp), and J T Polhemus (Martin Marietta Corp)
Jan 1977

MSC-14805

Vol 1, No 3, p 396

Feedback system notifies wearer when specific types of body motion occur

B76-10367**ACCELERATOR FOR BIOMEDICAL STUDIES**

G L Shillinger, Jr
Jan 1977

ARC-10898

Vol 1, No 3, p 398

Spring-operated accelerator produces precise and repeatable linear accelerations

B76-10368**MULTIPOSITION RESCUE LITTER**

R L Robbins (Rockwell Intern Corp)
Jan 1977

MSC-16148

Vol 1, No 3, p 399

Lightweight stretcher has wide range of applicability in emergency situations. Special hinges and supports eliminate need for separate accessory items and save weight and storage space

B76-10369**SHORT-RANGE BIOTELEMETRY SYSTEM**

R Lorentz (Southwest Res Inst)
Jan 1977

See also NASA-CR-144640 (N76-14474)

MSC-16011

Vol 1, No 3, p 400

Compact VHF transmitter relays EKG, EEG, and EMG data to receiver located over twenty-five feet away. Device can be used to monitor postoperative patients without cumbersome wires

B76-10370**DAM - DETECTION AND MAPPING**

Innovator not given Jan 1977

MSC-16096

Vol 1, No 3, p 401

Integrated set of manual procedures, computer programs, and graphic devices processes multispectral scanner data from orbiting LANDSAT into precisely registered and formatted maps of surface water and other resources at variety of scales, sheet formats, and tick intervals

B76-10530**MEAL SYSTEM FOR THE ELDERLY**

G R Primeaux, R G Ritz (Martin Marietta Corp), and G A Hruzak (Technol, Inc)
Mar 1977

See also NASA-CR-144516 (N76-10898)

MSC-16062

Vol 1, No 4, p 587

Packaged meals require no refrigeration and are nutritionally balanced. Single-serving portions are delivered in multiunit packs and are conveniently prepared in the home

B76-10531**CAUTION AND WARNING SYSTEM**

T M McClung (Garrett Corp), J T Parker (Garrett Corp), and P D Peterson (Garrett Corp)
Mar 1977

See also NASA-CR-144432 (N75-32760)

MSC-16046

Vol 1, No 4, p 588

Battery-operated, biomedical-monitoring and display network is used for intensive-care and patient monitoring. Digital, bus-oriented design enhances simplicity, flexibility, and noise immunity advantages. Network is 100 percent reprogrammable. Malfunctions are immediately displayed, accompanied by proper corrective procedures

B76-10532**INTERLOCKING BUTTERFLY TOURNIQUET**

L J Raggio (Rockwell Intern Corp) and B E Green (Rockwell Intern Corp)
Mar 1977

MSC-19382

Vol 1, No 4, p 589

Adjustable bandage, designed for one-handed application, closes skin lacerations to any desired degree

B76-10533**LIQUID-COOLED BRA FOR CANCER DETECTION**

B A Williams, W E Elkins (Aerotherm Corp), and E G Tickner (Aerotherm Corp)
Mar 1977

See also B74-10249

ARC-11007

Vol 1, No 4, p 590

Garment cools entire breast area uniformly, improving sensitivity of thermographic techniques. Flow and temperature of coolant are controlled by system which also monitors skin temperature

B76-10534**INEXPENSIVE PORTABLE DRUG DETECTOR**

J Dimeff, A H Heimbuch, and J A Parker
Mar 1977

ARC-10633

Vol 1, No 4, p 591

Inexpensive, easy-to-use, self-scanning, self-calibrating, portable unit automatically graphs fluorescence spectrum of drug sample. Device also measures rate of movement through chromatographic column for forensic and medical testing

B76-10535**IN VIVO BONE-STRAIN TELEMETRY**

D R Young, W H Howard, and E Koenigsberg (Koenigsberg Instr Co)
Mar 1977

ARC-11074

Vol 1, No 4, p 592

System permits long-term measurement of strains resulting from applied skeletal loads. Basic scheme utilizes pulse interval modulation

B76-10536**FAST MEASUREMENT OF BACTERIAL SUSCEPTIBILITY TO ANTIBIOTICS**

E W Chappelle, G L Picciolo, and C G Schrock (New England Med Center)
Mar 1977

See also B76-10073

GSFC-10246

Vol 1, No 4, p 592

Method, based on photoanalysis of adenosine triphosphate using light-emitting reaction with luciferase-luciferin technique, saves time by eliminating isolation period required by conventional methods. Technique is also used to determine presence of infection as well as susceptibilities to several antibiotics

B76-10537**BIOMEDICAL ULTRASONOSCOPE**

R D Lee
Mar 1977

ARC-10994

Vol 1, No 4, p 593

Portable, battery-powered device permits noninvasive examination of body's interior and is particularly well suited to real-time examination of heart. Instrument is capable of C-mode, A-mode, and M-mode scan display

B76-10538**AUTOMATIC MULTIPLE APPLICATOR ELECTROPHORESIS**

B W Grunbaum (California Univ, Berkeley)
Mar 1977

ARC-10991

Vol 1, No 4, p 594

Easy-to-use, economical device permits electrophoresis on all known supporting media. System includes automatic multiple-sample applicator, sample holder, and electrophoresis apparatus. System has potential applicability to fields of taxonomy, immunology, and genetics. Apparatus is also used for electrofocusing

B76-10539**MINIATURE EMERGENCY OXYGEN UNIT**

R S Gubin, H H Franks, R G Baynes (Bendix Corp), and J A Johnson (Bendix Corp)
Mar 1977

KSC-11011

Vol 1, No 4, p 596

Portable compact device includes resuscitation, inhalation, and aspiration modes. Device reduces extra time required to carry larger apparatus

05 LIFE SCIENCES

B76-10540

MULTISPECTRAL IMAGING FOR MEDICAL DIAGNOSIS

V J Anselmo

Mar 1977

NPO-13922

Vol 1, No 4, p 597

Photography technique determines amount of morbidity present in tissue Imaging apparatus incorporates numerical filtering Overall system operates in near-real time Information gained from this system enables physician to understand extent of injury and leads to accelerated treatment

B76-10541

AN ARTIFICIAL LEG FOR HIP DISARTICULATION

W C Vallotton

Mar 1977

ARC-10916

Vol 1, No 4, p 598

Apparatus uses energy-storage and damping devices to assist wearer in achieving more normal stride and pace

06 MECHANICS

B76-10079

HYDROSTATIC LIFT-OFF SEAL

P S Buckmann (Aerojet-Gen Corp)

Mar 1976

M-FS-21496

Vol 1, No 1, p 87

Interpropellant turbopump oxidizer seal consists of smooth flat surface on back of second-stage oxidizer impeller, floating seal ring, semistatic piston ring secondary seal, and low pressure flexible-bellows static secondary seal Seal performs static sealing at rest and controlled leakage sealing in operation

B76-10080

IMPROVED CRYOGENIC SHAFT SEALS

W A Gillon Jr (Rockwell Intern Corp) and G F Tellier (Rockwell Intern Corp)

Mar 1976

M-FS-19153

Vol 1, No 1, p 88

Seals are designed for use with liquid propellant ball valves at temperatures ranging from -400 F to 130 F and 8,000 psig Seals are capable of sustaining 90 degree rotation, with substantial amount of lateral and axial play caused by large pressure loads and differential thermal contraction

B76-10081

COST SAVING SYNERGISTIC SHAFT SEAL

L P Ludwig and T N Strom

Mar 1976

LEWIS-12119

Vol 1, No 1, p 90

Segmented carbon rings used to replace elastomeric seal lip, provide resistance to high temperatures generated in lubricating film Machining and close manufacturing tolerances of conventional segmented seal are avoided by mounting segmented rings in elastomeric flex section

B76-10082

PEAK-ACCELERATION LIMITER

R C Woodbury

Mar 1976

NPO-11940

Vol 1, No 1, p 91

Statistical limiter, which protects test specimens during random vibration testing, differentiates between peak acceleration levels that are normal components of vibration signal and those that exhibit damaging characteristics Device aborts test only when statistical properties of vibration signal change significantly or when catastrophic transient occurs

B76-10083

VACUUM-JACKETED LINE SPACER

F A Houte (McDonnell-Douglas Corp), H B McKee (McDonnell-

Douglas Corp), and T C Patten (McDonnell-Douglas Corp)

Mar 1976

MSC-14365

Vol 1, No 1, p 92

Device has three integral, equally spaced leaf springs Springs separate outer vacuum jacket from fluid carrying line yet minimize conductive heat leaks and liquid boiloff One-piece heat spring has sufficient flexibility to accommodate differential thermal expansion of inner and outer line

B76-10084

INEXPENSIVE LEAK-DETECTOR ENVELOPE

T F Lyon (GE)

Mar 1976

LEWIS-11305

Vol 1, No 1, p 93

Vacuum chamber is used with mass spectrometer to leak-check helical coils of tubing in large systems

B76-10085

ZERO-ANGLE HELICAL COIL

J A Troendle (Lockheed Missiles and Space Co)

Mar 1976

GSFC-10969

Vol 1, No 1, p 94

Device is constructed of bimetallic stock material formed into segments of small diameters and fastened together by metal strips Coil is useful in various types of actuators, such as temperature controls

B76-10086

REDUCING COLD FLOW IN ELASTOMERIC O-RINGS

R H Henry (Rockwell Intern Corp) and O K Olsen (Rockwell Intern Corp)

Mar 1976

M-FS-24336

Vol 1, No 1, p 94

Pretreatment technique accelerates compression set of O-rings seal is pressure loaded, seal and pressure mechanisms are heated to 160 F, load is applied to heated seal causing material to flow, parts are cooled to room temperature, and load is removed

B76-10087

FAST PRESSURE-SENSOR SYSTEM

C Gross

Mar 1976

LANGLEY-12003

Vol 1, No 1, p 96

Miniature silicon-diaphragm sensors and signal multiplexer are mounted to ganged zero-operate-calibrate pressure selector switches Device allows in-situ calibration, can be computer controlled, and measures at approximately 10,000 readings per second

B76-10088

NONCONTAMINATING METHOD FOR VISUALIZING GAS FLOW

F S Stepka D Pofert, and R J Goldstein (Minnesota Univ)

Mar 1976 See also NASA-CR-72991 (N72-14945)

LEWIS-12076

Vol 1, No 1, p 97

Fog, formed from dry ice and water, is used to simulate coolant inside pressure-tight tank Coolant's interaction with mainstream flow is observed visually and photographed

B76-10089

FLUID CLASSIFIER AND DISSEMINATOR

W C Kocmond (Cornell Aeron Lab Inc) and V A Depalma (Cornell Aeron Lab Inc)

Mar 1976

HQN-10748

Vol 1, No 1, p 97

Air-jet mill has two modifications, particle channel and large-particle exhaust port

B76-10090

SHOCK-TUBE DRIVER

L P Leibowitz

Mar 1976

NPO-13528

Vol 1, No 1, p 98

Annular-arc accelerator consists of cold gas driver expansion section, electrode sections, and shock tube section Triggering improvement provides higher velocities and reduces contamination.

B76-10091**SELF-CONTAINED CONSTANT-TEMPERATURE HEAT ABSORBER**

R W Lopez, J L Vaniman, and R R Fisher

Mar 1976

M-FS-22989

Vol 1, No 1, p 100

System maintains precise thermal control of heat producing component is not affected by changes in external pressure, ambient thermal environment, or gravity, and operates in both static and spinning attitudes. Size of device's spin axis-oriented orifice determines container pressure which establishes boiling temperature of heat absorption medium.

B76-10092**LIQUID-RETENTION CANOPY**

J H Dawson (Rockwell Intern Corp) and A F Brux (Rockwell Intern Corp)

Mar 1976

M-FS-24133

Vol 1, No 1, p 101

Device prevents severe fuel sloshing and bubbling and redirects fluid motion to tank bottom. Cryogenic boiloff wetted wall areas, and pressure collapse are reduced.

B76-10093**INTRODUCING CONTROLLED MATTER INTO A FLUID SYSTEM**

C E Hoffman (Rockwell Intern Corp)

Mar 1976

M-FS-24309

Vol 1, No 1, p 102

Device consisting of capsule holder and glass inner tube has been developed to handle controlled particulate-contamination samples. Premeasured quantity of particles can be injected into closed fluid system without contamination.

B76-10094**PROPELLANT SIDE FEED**

W J Guman (Fairchild Hiller Corp)

Mar 1976

LANGLEY-11082

Vol 1, No 1, p 103

New solid-propellant configurations increase thrust-to-power ratio of pulsed plasma microthruster and provide possibility of varying thrust. Techniques are adaptable to sputter coating of polymeric material or pulsed ablating light sources.

B76-10095**RESISTANCE HEATING ELEMENTS WITH SPECIFIC HEATING PROFILES**

M H Hirschberg

Mar 1976

LEWIS-10719

Vol 1, No 1, p 104

Bundled interrupted resistance heating elements provide specific heating profiles. Design allows for easily tailored lengths and locations of 'hot sections' and larger surface areas for heat radiation.

B76-10096**ANALYTIC NUMERICAL SOLUTIONS FOR SHOCK WAVES**

R W MacCormack and A J Paullay (Bronx Community Coll/CUNY)

Mar 1976

ARC-10959

Vol 1, No 1, p 105

Study of weak solutions of simple wave equation inviscid Burgers equation, and Euler equations has resulted in technique for accurate prediction of shock waves occurring in inviscid supersonic flows.

B76-10097**MEASUREMENT OF RAPIDLY-CHANGING HEATING RATES**

E W Schwartz (General Dynamics Corp)

Mar 1976

LANGLEY-11380

Vol 1, No 1, p 106

Easily-fabricated heating rate sensor accurately measures heating rates that are changing rapidly. Design is based on numerous heat transfer analyses. Calibration is required but no maintenance is needed other than for the thermocouple system.

B76-10098**JPL SOLAR POWER EXPERIMENTS**

R K Yasui

Mar 1976

NPO-13461

Vol 1, No 1, p 107

Report describes evolution of photovoltaic power systems designed and built for terrestrial use. Discussion focuses on technological problems impeding further systems development. Experiments and test data on seven types of solar panels and six material test specimens are described in detail.

B76-10099**GUST ALLEVIATION FOR STOL AIRCRAFT**

W I Oehman

Mar 1976. See also NASA-TN-D-7202 (N73-20013)

LANGLEY-11413

Vol 1, No 1, p 107

Analytical study suggests method of improving flight performance of airplanes having relatively low wind loading and those flying at low altitudes.

B76-10100**OUTER FLOW AND TURBULENCE IN BOUNDARY LAYERS**

W C Cliff and V A Sandborn

Mar 1976

M-FS-23286

Vol 1, No 1, p 108

Results presented in report indicate that perturbations travel through boundary layer and give rise to turbulence production process which occurs near viscous sublayer. Part of turbulence produced near wall in turn, moves outward and eventually produces convoluting outer edge of boundary layer to reproduce and sustain itself.

B76-10101**PRESSURE TUBE INSTRUMENTATION**

G Foerster, O Mehmed, and R Mueller

Mar 1976

LEWIS-12539

Vol 1, No 1, p 108

Set of standards in the form of drawings provides detailed information about materials fastening techniques, surface finishes, critical dimensions, quality control specifications, and installation methods for variety of static and total pressure tube instrumentation.

B76-10102**JOULE-THOMSON DATA CURVES**

H W Beimgraben (Boeing Co)

Mar 1976

KSC-10538

Vol 1, No 1, p 109

Series of graphs shows temperature-pressure relationship for air, nitrogen, helium, oxygen, and hydrogen when flowing across line restriction over wide range of temperatures and pressures. Graphs can be applied as engineering guides for component manufacturers and piping system designers.

B76-10103**OPTIMAL INSENSITIVE-CONTROLLER SYNTHESIS**

C A Harvey (Honeywell, Inc) and Y S Lee (Honeywell Inc)

Mar 1976

M-FS-21666

Vol 1, No 1, p 109

Proof of two theorems is included in report. Local sufficiency condition for existence of insensitive controllers in the case of sufficiently small parameter variations and necessary condition for optimal controller corresponding to point in boundary of domain of admissible parameter variations to be optimal insensitive controller.

B76-10104**NASTRAN COMPONENT-MODE SYNTHESIS**

R J Guyan (Rockwell Intern Corp)

Mar 1976

MSC-19632

Vol 1, No 1, p 110

Procedure for dynamic substructuring analysis technique is generally as follows: calculation of component modes, selection of component normal modes, calculation of component generalized matrices, assembly of system matrices, and computation of normal modes, and retrieval of component response.

06 MECHANICS

B76-10105

MINIVER MINIATURE VERSION OF REAL/IDEAL GAS AERO-HEATING AND ABLATION COMPUTER PROGRAM

D R Hendler (McDonnell-Douglas Corp)

Mar 1976

M-FS-21951

Vol 1, No 1, p 110

Computer code is used to determine heat transfer multiplication factors, special flow field simulation techniques, different heat transfer methods, different transition criteria, crossflow simulation, and more efficient thin skin thickness optimization procedure

B76-10106

ESOP VERSION IV ENERGY SYSTEMS OPTIMIZATION PROGRAM

Innovator not given (Lockheed Electronics Co) Mar 1976

MSC-14854

Vol 1, No 1, p 110

Program has six general analytical components waste disposal heating/cooling loads, energy requirements, power generation, waste water treatment, and conventional utility system

B76-10107

TANGENT-OGIVE NOSE CONES

L D Wing

Mar 1976

GSFC-11468

Vol 1, No 1, p 111

Program calculates aerodynamic heating and shear stresses at wall for tangent-ogive noses that are slender enough to maintain an attached nose shock during portion of flight when heat transfer from boundary layer to wall is significant

B76-10108

DYNGEN

J F Sellers and C J Daniele

Mar 1976

LEWIS-12506

Vol 1, No 1, p 111

Steady-state and transient performance of turbofan and turbojet engines are analyzed Program uses large time steps, gives analyst freedom in selecting equations needed to describe system, and eliminates discrepancies in answers often generated by transient and steady-state simulations

B76-10109

VENTING FOR CONDENSATION IN GAS LINES

R A Moses (Rockwell Intern Corp)

Mar 1976

MSC-19621

Vol 1, No 1, p 112

Computer program provides information on quantity of condensate and effect of line heat transfer and temperature on eliminating or minimizing condensate that might affect gas flow adversely

B76-10110

REJECT

B H Anderson

Mar 1976

LEWIS-12375

Vol 1, No 1, p 112

Computer program determines performance and flow field characteristics of supersonic ejector nozzle It includes sonic line effects and interaction analysis for mixing process between primary and secondary flows of nozzle

B76-10111

BUCLAP2

D W Halstead (Boeing Co) L L Tripp (Boeing Co), M Tamekuni (Boeing Co) L L Baker (Boeing Co) and A V Viswanathan (Boeing Co)

Mar 1976

LANGLEY-11696

Vol 1, No 1, p 112

Program is used to predict buckling of rectangular flat and curved laminated plates subjected to in-plane normal and shearing loads with each lamina composed of orthotropic material with arbitrary orientation of orthotropic axes

B76-10112

SWEPT-TAPERED-WING AERODYNAMICS

L E Putnam

Mar 1976

LANGLEY-11701

Vol 1, No 1, p 113

Computer program calculates effects on lift and drag of blowing two jets over swept tapered wing at low subsonic speeds Algorithm used is based on vortex lattice representation of wing lifting surface on line source-sink distribution to represent effects of exhaust jets

B76-10113

SESOPI PROGRAM FOR SOLAR-ENERGY HEATING-SYSTEMS ANALYSIS

Innovator not given (Lockheed Electronics Co) Mar 1976

MSC-14853

Vol 1, No 1, p 113

Space heating and cooling loads are calculated for each building based on outside environment, desired inside conditions, building construction and geometry, domestic power usage, occupancy rate, and occupant metabolic rate Loads are summed to determine requirements of central and alternative utility systems

B76-10214

CONSTANT-RATE FLUID-DELIVERY SYSTEM

D S Jacob (Beckman Instr, Inc)

Aug 1976

MSC-14905

Vol 1, No 2, p 227

Mechanical-feedback regulated modulating valve maintains pressure in bag equal to that within bellows, causing fluid to be expelled at a constant rate Adaptable to systems where bellows are replaced by cylinders bladders, or diaphragms

B76-10215

ROUS SYSTEM

J S Heyman

Aug 1976

LANGLEY-12015

Vol 1, No 2, p 228

Ultrasonic generator/monitor, appropriate for lab and field use is used to measure ultrasonic parameters and determine certain physical properties of test region Reflection-oscillator ultrasonic spectrometer is sensitive, inexpensive, has no duty-cycle effects, is simple in construction and use, and for resonance measurements, takes advantage of sensitivity enhancement, and has high frequency stability

B76-10216

ROUS BOLT-TENSIONING MONITOR

J S Heyman and F D Stone

Aug 1976

LANGLEY-12016

Vol 1, No 2, p 229

Closed-loop feedback circuit system used to measure bolt tension Advantages are its simplicity, higher accuracy, and potential low cost

B76-10217

COMPUTER-AUTOMATED ULTRASONIC INSPECTION SYSTEM

D Dunmyer (General Dynamics Corp), A H Gardner (General Dynamics Corp), E E Kerlin (General Dynamics Corp), J S Kunselman (General Dynamics Corp), A R Robinson (General Dynamics Corp), T C Walker (General Dynamics Corp), T G Wells (General Dynamics Corp), and B G W Yee (General Dynamics Corp)

Aug 1976

M-FS-23338

Vol 1, No 2, p 230

Computer system automatically analyzes and records ultrasonic weld inspection data Unit can be operated in three modes manual, automatic and computer-controlled

B76-10218

FAIL-SAFE HYDRAULIC SHAKER PROTECTION

R C Woodbury

Aug 1976

NPO-13726

Vol 1, No 2, p 231

Nine channel system controls acceleration and force on structure undergoing vibration stress testing System has automatic and manually operative abort feature

B76-10219**PUMP FAILURE MONITOR**

J L Frarey (Shaker Res Corp), D S Wilson (Shaker Res Corp) and R F Burchill (Shaker Res Corp)
Aug 1976

M-FS-23366**Vol 1, No 2, p 232**

High-frequency vibration technique predicts failure in pumps

B76-10220**VAPOR/LIQUID INTERFACE SENSOR**

J E Briegy
Aug 1976

MSC-12474**Vol 1, No 2, p 233**

Fluidic circuit senses level of liquid nitrogen in pipe or container by responding to pressure changes

B76-10221**IMPROVED HIGH-TEMPERATURE HEATER WITH STABILIZED-ZIRCONIA ELEMENTS**

C R Halbach (Advanced Res and Technol) and R J Page (Advanced Res and Technol)
Aug 1976

M-FS-23361**Vol 1, No 2, p 234**

Improved conducting-ceramic heating elements extend performance and life expectancy of 2 100 C furnace

B76-10222**HOT-WIRE PROBE**

V Mikulla
Aug 1976

ARC-10900**Vol 1, No 2, p 236**

High-temperature platinum probe measures turbulence and Reynolds shear stresses in high-temperature compressible flows. Probe does not vibrate at high velocities and does not react like strain gage on warmup

B76-10223**'THERMAL-DIODE' HEAT PIPE**

J P Kirkpatrick, B Swierdling (Grumman Aircraft Corp) and R Kosson (Grumman Aircraft Corp)
Aug 1976

ARC-10997**Vol 1, No 2, p 237**

Device transfers heat in one direction and blocks heat transfer in opposite direction

B76-10224**FATIGUE LIFE OF SPUR AND HELICAL GEAR SETS**

D P Townsend, E V Zaretsky and J J Coy (USAAMRDL)
Aug 1976 See also NASA-TN-D-8029 (N75-29434), NASA-TN-D-8045 (N75-30564)

LEWIS-12596**Vol 1, No 2, p 238**

Mathematical model is used to determine surface fatigue life of spur and helical gears. Can also be used to calculate dynamic capacity

B76-10225**FASTER X-RAY ANALYSIS OF SEMICONDUCTOR WAFERS**

D L Parker (Texas A and M Univ) and W A Porter (Texas A and M Univ)
Aug 1976

M-FS-23315**Vol 1, No 2, p 238**

X-ray camera, through use of vacuum chuck significantly reduces cost per topograph by bending semiconductor wafer by at least one order of magnitude

B76-10226**ATTENUATION OF SOUND IN DUCTS WITH ACOUSTIC TREATMENT**

E J Rice
Aug 1976 See also NASA-TM-X-71830 (N76-12827)

LEWIS-12686**Vol 1, No 2, p 239**

Generalized approximate equation for duct-lining sound attenuation can be used for initial acoustic-liner design and analysis

B76-10227**FROZEN-FLUID LINE REPAIR**

J A Stein (Rockwell Intern Corp)
Aug 1976

MSC-19132**Vol 1, No 2, p 240**

Improved line-freezing equipment permits fluid line repairs in previously inaccessible areas

B76-10228**SIMPLIFIED EXPLOSIVE-WELD EVALUATION**

D M McLarty (Martin Marietta Corp)
Aug 1976

MSC-14654**Vol 1, No 2, p 241**

Weld surfaces coated with commercially available molybdenum disulfide, allow visual inspection of significant indications of bond quality. Process reduces number of trial welds making explosive bonding more competitive

B76-10229**NOMOGRAPH FOR CASTOR-CUSHION DESIGN**

G L Dillard (Rockwell Intern Corp)
Aug 1976

MSC-17094**Vol 1, No 2, p 242**

Diagram aids development of castor cushions with individual suspension characteristics

B76-10230**CABLE-LOAD EQUALIZATION SYSTEM**

R W Benjamin (Rockwell Intern Corp)
Aug 1976

MSC-17494**Vol 1, No 2, p 243**

Limited-slip differential, used to drive dual-cable winches synchronizes winding speeds and ensures equal loading of both cables

B76-10231**ANALYSIS OF BONDED JOINTS**

S R Srinivasa (Argonne Natl Lab)
Aug 1976 See also NASA-TN-D-7855

LANGLEY-11871**Vol 1, No 2, p 243**

Report describes analysis of single-lap double-lap and flush joints for peel and shear stresses

B76-10232**FLUID HANDLING EQUIPMENT**

Innovator not given Aug 1976 See also NASA-SP-5976(03)

HQN-10890**Vol 1, No 2, p 244**

Report describes twenty-four concepts and methods developed for fluid transport technology

B76-10233**HEAT PIPE TECHNOLOGY**

Innovator not given (New Mexico Univ) Aug 1976

HQN-10901**Vol 1, No 2, p 244**

Continuing bibliography with abstracts of technical reports, books, conference papers, foreign reports and translations, patents, and other documents. Author, subject, and patent indexes included

B76-10234**CRYOGENIC STORAGE TANK THERMAL ANALYSIS**

J P Wright (Rockwell Intern Corp)
Aug 1976

MSC-19103**Vol 1, No 2, p 244**

Parametric study discusses relationship between cryogenic boil-off and factors such as tank size, insulation thickness and performance, structural-support heat leaks and use of vapor-cooled shields. Data presented as series of nomographs and curves

B76-10235**SOLAR HEATING AND COOLING PERFORMANCE**

J W Littles and J C Cody
Aug 1976

M-FS-23432**Vol 1, No 2, p 245**

Study describes technique developed for comparison of devices to determine if conventional energy resources may be saved

B76-10236**THERMAL NETWORK MODELING HANDBOOK**

Innovator not given (TRW Systems Group) Aug 1976 See also NASA-CR-144418 (N75-30483)

MSC-14964

Vol 1, No 2, p 245

Reference describes standard formulas, techniques, and terminology used in constructing mathematical models

B76-10237**IMPEDANCE OF CURVED DUCTS**

W A Rostafinski

Aug 1976 See also NASA-TM-X-2698 (N73-15705) NASA-TM-X-71827 (N76-13881)

LEWIS-12636

Vol 1, No 2, p 245

Mathematical solution permits showing that, for circular bends in hardwalled ducts of rectangular cross sections, specific acoustic impedance depends on both frequency and geometry of bend

B76-10238**REMOTE SENSING OF NATURAL RESOURCES**

Innovator not given (New Mexico Univ) Aug 1976

HQN-10899

Vol 1, No 2, p 246

Quarterly literature review compiles citations and abstracts from eight major abstracting and indexing services Each issue contains author/keyword index Includes data obtained or techniques used from space, aircraft or ground-based stations

B76-10239**NECAP NASA ENERGY-COST ANALYSIS PROGRAM**

Innovator not given (GATX Inc) Aug 1976

LANGLEY-11888

Vol 1, No 2, p 247

Computer program evaluates design and operation of facilities in regard to building energy consumption

B76-10240**SHOCK INTERFERENCE PATTERNS AND HEATING**

D J Morris and J W Keyes

Aug 1976

LANGLEY-11497

Computer programs calculate two-dimensional patterns for six types of supersonic and hypersonic interference flow fields and surface heating

B76-10241

Vol 1, No 2, p 248

COMOC A FINITE-ELEMENT ALGORITHM FOR THE NAVIER-STOKES EQUATIONS

A J Baker (Bell Aerospace Corp), A M Bauer (Bell Aerospace Corp), P D Manhardt (Bell Aerospace Corp), and J A Orzechowski (Bell Aerospace Corp)

Aug 1976

LANGLEY-11480

Vol 1, No 2, p 247

Finite-element algorithm devised to facilitate solution of two-dimensional Navier-Stokes equations governing kinematics and thermodynamics of variable-viscosity, compressible, multiple-species fluid Algorithm has been implemented into existing computer program system

B76-10242**PREDICTING OFF-DESIGN PERFORMANCE OF RADIAL-INFLOW TURBINES**

C A Wasserbauer and A J Glassman

Aug 1976 See also B69-10267

LEWIS-12500

Vol 1, No 2, p 249

Computer program is useful where performance at design operating point is known and as design guide

B76-10243**CRACK-GROWTH ANALYSIS**

C Bianca and M Creager (Dell West Assoc)

Aug 1976

M-FS-23320

Vol 1, No 2, p 249

Flexible adaptable integrative routine computer program incorporates Collipriest-Ehret and Paris-Forman equations It calculates growth from initial defect size and terminates calculation when crack is sufficiently large for critical condition Wheeler, Willenborg and Grumman Closure models are available

B76-10371**FLEXIBLE-PILE THERMAL SEALANT**

G E Anderson (Rockwell Intern Corp), D M Fell (Rockwell Intern Corp) and J S Tesinsky (Rockwell Intern Corp)

Jan 1977

MSC-19568

Vol 1, No 3, p 405

Brushlike material insulates variable-width gaps where severe thermal stress is present Weave-and-tuft strip has low thermal conductivity working temperature range from -454 to 2,000 F, low load compressibility, and good inhibition of plasma flow

B76-10372**ULTRASONIC MEASUREMENT OF FRACTURE TOUGHNESS**

A Vary

Jan 1977 See also NASA-TM-X-71769 (N75-29241), NASA-TM-X-71889 (N76-21319)

LEWIS-12642

Vol 1, No 3, p 406

Inexpensive nondestructive method ranks materials by crack toughness Method can reduce expenses involved in conventional mechanical destructive testing and can be inspection tool in determining local variations of materials in fracture-prone components

B76-10373**WINGTIP SMOKE GENERATOR**

J R Rogers

Jan 1977

ARC-10905

Vol 1, No 3, p 407

Device produces nontoxic smoke of low particle density assisting in investigation and study of aircraft wingtip vortexes in flight It can be dimensioned according to available current and oil capacity

B76-10374**MEASURING TRACE DISPERSANTS IN GAS STREAMS**

O L Updike (Virginia Univ)

Jan 1977

ARC-10896

Vol 1, No 3, p 408

Detection system uses phase shift of acoustic waves to measure amount of gaseous substances on sorption sensor Three-part device optimizes stability and assists in achieving low-phase-noise levels

B76-10375**NOISE SUPPRESSOR FOR TURBOFAN-JET ENGINES**

D Y Cheng (Santa Clara Univ)

Jan 1977

ARC-10812

Vol 1, No 3, p 409

Exhaust nozzle equipped with bypass separators is basis of lightweight device Innovation does not reduce thrust unduly and has no moving parts

B76-10376**AIR-SUSPENDED DYNAMOMETER TABLE**

T A Casad

Jan 1977

NPO-13794

Vol 1, No 3, p 410

Device improves accuracy of fractional-horsepower testing

B76-10377**TIME-DOMAIN REFLECTOMETRY FOR CABLE-FAULT ISOLATION**

K D Wood (IBM)

Jan 1977

KSC-10741

Vol 1, No 3, p 411

Instrument can be used to isolate fault at specific multiple-cable splice location

B76-10378**FLUID-FILM BEARING DAMPER**

R E Cunningham

Jan 1977 See also NASA-TN-D-7987 (N75-25192)

LEWIS-11158

Vol 1, No 3, p 412

Device for rotating machinery has noncircular support that allows changes in dynamic properties Device can be controlled

for either manually or automatically altering its stiffness and damping properties without interruption of operation

B76-10379

ALL-NICKEL HOT-WIRE PROBE

F R Lemos

Jan 1977

ARC-10911

Vol 1, No 3, p 413

Device operates in supersonic and hypersonic wind tunnels at temperatures of 700 to 760 C

B76-10380

VELOCITY SENSOR FOR SLOW FLOWS

W E Simon (Martin Marietta Corp)

Jan 1977

LANGLEY-11785

Vol 1, No 3, p 414

Inexpensive, easily-constructed device measures flows from 0.2 to 20 feet per second. Instrument is capable of measuring flow velocity and direction in cases where either velocity or density is so low that dynamic pressure is below measurable range. It can be made into hand held instrument for measuring ventilation and air conditioning flow.

B76-10381

IMPROVED GAS-PRESSURE TRANSDUCER

J Dimeff

Jan 1977 See also B72-10198 B74-10243 B75-10082

ARC-10639

Vol 1, No 3, p 415

Optically-selective acoustically-resonant, gas-detecting device is used to measure intensity of radiation-induced pressure variations. Use of diaphragm improves sensitivity and immunity to background noise.

B76-10382

CONTAMINATION MONITORING OF FLUIDS

R D Bonnell (South Carolina Univ), R O Pettus (South Carolina Univ), C A Rhodes (South Carolina Univ) and I F Stowers (South Carolina Univ)

Jan 1977

KSC-11037

Vol 1, No 3, p 416

Electro-optical device, consisting of laser and photodiodes is adaptable to processing industries, pollution control, medical technology and food technology.

B76-10383

DESIGN OF REDUNDANT SYSTEMS

L F Doty (Honeywell, Inc)

Jan 1977

MSC-16026

Vol 1, No 3, p 417

Algorithmic approach is useful for analysis of systems with noisy inputs and when outputs are required in terms of statistical quantities and probabilities of signal excursions beyond desired levels. Procedure can be used with circuits, chemical processes, material design and other systems with known transfer functions and parameter tolerances.

B76-10384

SUBLIMATOR/EVAPORATOR HEAT SINK

B W Webbon

Jan 1977

ARC-10912

Vol 1, No 3, p 418

Economical self-regulating device cools liquids by evaporating portion of liquid through porous tubes. Technique is characterized by high heat transfer rate and structural simplicity.

B76-10385

LOW-ONSET-RATE ENERGY ABSORBER

W H Keathley and C J Wesselski

Jan 1977 See also NASA-TM-X-64444 (N70-35706)

MSC-12279

Vol 1, No 3, p 419

Device controls deceleration rates without amplifying system loads. It dissipates energy of motion through friction heat and is 22 times more efficient than automobile brakes.

B76-10386

CAPACITIVE SHAFT-ANGLE ENCODER

R J Hruby and R L Wilson

Jan 1977

ARC-10897

Vol 1, No 3, p 420

Economical device is less subject to wear than conventional resistive-potentiometer devices.

B76-10387

AC ADAPTER FOR FUEL-FLOW SENSOR

L L Millman

Jan 1977

GSFC-12037

Vol 1, No 3, p 422

Readily-available fuel meters can be used to aid in fuel oil conservation in homes and commercial buildings. Device also includes failure monitor that activates warning light and horn if meter fails.

B76-10388

PADDLE-PIN ALINEMENT TEST

D M Gilliam and J A Foster

Jan 1977

KSC-10740

Vol 1, No 3, p 423

Segmented insulated test bar speeds up patch distributor paddle-pin test. Device eliminates need to disconnect cables or remove distributor. Printed circuit cable and connector reduces weight on bar, adding to tester portability.

B76-10389

ATMOSPHERE-GENERATING SYSTEM

R E Mahan (Lockheed Missiles and Space Co), P A Wagner (Lockheed Missiles and Space Co), and W J Conner (Fluid Dyn Corp)

Jan 1977 See also NASA-CR-134390 (N74-31581)

MSC-14713

Vol 1, No 3, p 424

Electrolytic conversion of hydrazine and water in low-pressure tanks to life-support atmosphere requires lighter weight equipment than high-pressure or cryogenic storage techniques.

B76-10390

MANUAL TRASH COMPACTOR

G E Stevenson (Nelson and Johnson Eng., Inc)

Jan 1977

MSC-16039

Vol 1, No 3, p 426

Device eliminates need for individual refuse bags and disposal containers and may prove less expensive to manufacture and use than powered compactors. Instrument has compressive force of 2 000 pounds.

B76-10391

TIME-DOMAIN AIRCRAFT MODEL

D K Scharmack (Honeywell, Inc)

Jan 1977

MSC-16018

Vol 1, No 3, p 427

Fourier transformation improves aerodynamic coefficients.

B76-10392

FUNDAMENTALS OF FLUID SEALING

J Zuk

Jan 1977 See also NASA-TM-X-71851 (N76-17399)

NASA-TN-D-8151 (N76-19462)

LEWIS-12683

Vol 1, No 3, p 427

Textbook covers fundamentals of fluid sealing. Included are seal performance parameters and seal operating regimes.

B76-10393

ASTRONAUTIC STRUCTURES MANUAL

Innovator not given Jan 1977

M-FS-23547

Vol 1, No 3, p 427

Three-volume reference work serves as catalog of analysis techniques for elastic and inelastic stress ranges and as source on background and development of methods. Information is condensation of published journal articles, industry and university publications, textbooks and government documents.

B76-10394

CAVITATING PERFORMANCE OF PUMPING MACHINERY

J Hord (NBS), L M Anderson (NBS) and W J Hall (NBS)

06 MECHANICS

Jan 1977 See also NASA-CR-2054 (N72-24363), NASA-CR-2156 (N73-16255) NASA-CR-2242 (N73-28153), NASA-CR-2448 (N74-34704)

LEWIS-12423 Vol 1, No 3, p 428

Four-volume publication contains extensive cavitation data and simplified technique for predicting cavitation performance of pumps

B76-10395

SOLAR HEATED AND COOLED OFFICE BUILDING

W L Maag

Jan 1977 See also NASA-TM-X-71615 (N74-34541)

LEWIS-12512 Vol 1, No 3, p 429

Installation at NASA Langley Research Center Hampton, Virginia, serves as full-scale working test-bed facility to test flat-plate solar-energy collector systems

B76-10396

GEODYN ORBITAL AND GEODETIC PARAMETER ESTIMATION

B Putney

Jan 1977

GSFC-12014 Vol 1, No 3, p 429

Computer program is capable of calculating orbit and geodetic parameter estimates Program can also be used for translunar and interplanetary trajectories

B76-10397

AIR-CUSHION LANDING SYSTEMS

K M Captain (Foster-Miller Associates Inc) A Boghani (Foster-Miller Associates, Inc) and D N Wormley (Foster-Miller Associates, Inc)

Jan 1977

LANGLEY-11783 Vol 1, No 3, p 430

Computer program based on heave/pitch analysis simulates dynamic behavior during landing impact and taxi over irregular runway Program can be adapted to run on any computer with FORTRAN compiler

B76-10398

ANALYSIS OF AXISYMMETRIC SHELL STRUCTURE

W B Stephens, G A Cohen (Structures Res Associates), and R T Haftak (Structures Res Associates)

Jan 1977

LANGLEY-12059 Vol 1, No 3, p 430

Six compatible computer programs analyze stress vibration and buckling characteristics of general shells of revolution

B76-10399

SPAR STRUCTURAL-PERFORMANCE ANALYSIS AND REDESIGN

W D Whetstone (Lockheed Missiles and Space Co) and L Krefling

Jan 1977

LANGLEY-12062, M-FS-23182 Vol 1, No 3, p 431

System of processor programs performs stress buckling, and vibrational analysis of large linear finite element systems in excess of 50 000 degrees of freedom, while minimizing processing cost execution time, central memory storage, and secondary data storage requirements Programs use sparse matrix solution techniques and other computational and data management procedures

B76-10400

MATH MODEL OF 3-D AIRCRAFT CONFIGURATION

C B Craidon

Jan 1977

LANGLEY-12029 Vol 1, No 3, p 432

Computer program can be used to construct surface equations for aircraft configurations Geometry input section can be replaced to adapt program to any three-dimensional object or objects

B76-10401

TRANSIENT THERMAL ANALYSIS OF FLUID SYSTEMS

G D Chandler (Rockwell Intern Corp) and R D Trust (Rockwell Intern Corp)

Jan 1977

MSC-19502

Vol 1, No 3, p 433

Computer program performs transient thermal analysis of any 2-node to 200-node-thermal network, which transports heat by fluid flow convection Program can be modified to add conduction along tubes and radiation

B76-10402

DETERMINING AIRCRAFT STABILITY AND CONTROL DERIVATIVES

K W Iliff and R E Maine

Jan 1977

ARC-10109 Vol 1, No 3, p 433

System of three computer programs determines stability and control derivatives from flight data

B76-10403

SWEPT WING AERODYNAMICS

F A Dvorak (Flow Res, Inc) and F A Woodward (Flow Res, Inc)

Jan 1977

ARC-10790 Vol 1, No 3, p 434

Technique analyzes viscosity-dependent aerodynamic characteristics of multielement infinite swept wings in incompressible flow Use of source distributions rather than displacement thickness to represent boundary layer effect on potential flow and of iterative technique for matrix inversion reduces computer time for overall analysis

B76-10404

CONTROL SYSTEM DESIGN

R C Seidel and B Lehtinen

Jan 1977

LEWIS-12556 Vol 1, No 3, p 434

Computer program optimizes parameters in feedback controller transfer function

B76-10542

INDICATED MEAN-EFFECTIVE PRESSURE INSTRUMENT

W J Rice

Mar 1977

LEWIS-12661 Vol 1, No 4, p 601

Device is capable of measuring and calculating IMEP of internal combustion engines in real time Apparatus is used to provide mass flow measurements in engine cylinder and in measurement of release energy of nonlinear spring

B76-10543

PRECISION MEASUREMENT OF CHANGES IN PHYSICAL DIMENSIONS

J W Berthold, III (Arizona Univ), S F Jacobs (Arizona Univ), and M Norton (Arizona Univ)

Mar 1977

M-FS-23527 Vol 1, No 4, p 602

Interferometric method is used to measure small changes in size of optical materials Error introduced with optical phase shifts occurring with time is overcome by using parts of Fabry-Perot resonators with unequal lengths Both stability of optical phase shifts upon reflection from multilayer stacks and dimensional stability of optical contacts is measured

B76-10544

AUTOMATED SECONDARY STANDARD FOR LIQUID FLOWMETERS

H F Hobart

Mar 1977 See also NASA-TM-X-71876 (N76-18404)

LEWIS-12695 Vol 1, No 4, p 603

Calibration time is reduced from one hour to fifteen minutes Accuracies of flowmeter calibrations are approximately 99 75 percent, using this standard Standard is also used to test or set flow switches

B76-10545

NONDESTRUCTIVE INTERIOR EXAMINATION OF MOVING PARTS

F A Baker (Rockwell Intern Corp)

Mar 1977

M-FS-23378

Vol 1, No 4, p 604

Microphone and amplified audio system are used in conjunction with X-ray nondestructive testing to detect foreign particles inside moving hardware when particles cannot be located by X-ray alone

B76-10548**FLANGE WELD PRESSURE TESTING**

C F Holden (Rockwell Intern Corp)

Mar 1977

M-FS-19292

Vol 1, No 4, p 605

Device allows localized high-pressure proof test Use of tool eliminates need to block off far end of pipe, only small amount of pressurizing gas is needed only small area needs to be cleared of personnel for proof test

B76-10547**ULTRASONIC MONITORING OF CRACK EXTENSION**

S J Kliman, D M Fisher, and R J Buzzard

Mar 1977 See also NASA-TM-X-71754 (N75-30606)

LEWIS-12632

Vol 1, No 4, p 605

System consisting of commercial ultrasonic flaw detector with transducer clamped to specimen and x-yy' recorder provides permanent record of crack extension, resulting in clear indication of onset of cracking that is relatively insensitive to plastic deformation

B76-10548**MECHANICAL LOADER FOR TESTING COMPOSITES**

I M Daniel (IIT Res Inst) and T Liber (IIT Res Inst)

Mar 1977 See also NASA-CR-134826 (N75-30264)

LEWIS-12432

Vol 1, No 4, p 606

Device applies constant preload to environmentally cycled specimens Loading spring for each specimen has sufficiently large deflection to insure insignificant degree of change in specimen load during thermal cycling

B76-10549**THERMAL/VACUUM TESTING OF LASER CORNER-CUBE RETROREFLECTORS**

Innovator not given (Bendix Corp) Mar 1977

M-FS-23565

Vol 1, No 4, p 608

Test procedure for optimum cube design records beam-return patterns photographically

B76-10550**ACOUSTIC TESTING OF MATERIALS**

Innovator not given (Bolt, Beranek, and Newman, Inc) Mar 1977

LANGLEY-11659

Vol 1, No 4, p 609

Sound-absorption coefficients are measured with or without anechoic chamber

B76-10551**LEAK TESTING GLASS AMPOULES**

B J Kallman (TRW, Inc)

Mar 1977

LANGLEY-11988

Vol 1, No 4, p 610

Test sensitivity is enhanced by using mass spectrometer

B76-10552**DETECTING CONTAMINATION ON A METAL SURFACE**

J M Harris (Rockwell Intern Corp), H L Marcus (Rockwell Intern Corp) and T Smith (Rockwell Intern Corp)

Mar 1977

M-FS-19280

Vol 1, No 4, p 610

Thin layers of contaminant on metal surface are detected by measuring surface-potential difference between reference electrode and surface of interest Procedure does not require mechanical contact with surface under examination

B76-10553**DETECTION OF SURFACE IMPURITIES ON PROCESSED METALS**

J V Kenkel (Rockwell Intern Corp), F B Mansfield (Rockwell

Intern Corp), H L Marcus (Rockwell Intern Corp), and N E Paton (Rockwell Intern Corp)

Mar 1977

MSC-19670

Vol 1, No 4, p 611

Method is based on measurements of electrical conductivity through layer of distilled water that has been deposited on metal surface Conductivity is measured for 15-30 minute period, which is sufficient time to allow surface impurities to dissolve in water

B76-10554**HEAT-TRANSFER COEFFICIENTS OF PIN-FINNED CYLINDERS**

G J VanFossen, Jr

Mar 1977 See also NASA-TM-X-3173 (N75-14990)

LEWIS-12557

Vol 1, No 4, p 612

Pin-finned cylinder can increase heat-transfer rate to more than 4 times that of plain cylinder, depending on pin diameter and spacing Smallest diameter, closest spacing, and largest pin length-to-diameter ratio gives highest average effective heat-transfer coefficients

B76-10555**MINIATURE-ANGULAR-POSITION TRANSDUCER**

D L Gray and M C Sandford

Mar 1977

LANGLEY-11999

Vol 1, No 4, p 613

Simple and inexpensive device using solar cells, measures rapidly-responding active control surfaces of aeroelastically-scaled wind-tunnel models of aircraft Device allows control surfaces to be measured to within 0.10 deg

B76-10556**ONE-WIRE THERMOCOUPLE**

W D Goodrich and C J Staimach (LTV Aerospace Corp)

Mar 1977 See also B76-10593, NASA-CR-144364 (N75-29356)

MSC-16220

Vol 1, No 4, p 614

Nickel alloy/constantan device accurately measures surface temperature at precise locations Device is moderate in cost and simplifies fabrication of highly-instrumented seamless-surface heat-transfer models Device also applies to metal surfaces if constantan wire has insulative coat

B76-10557**PULSE DETECTOR**

N E Simmons (Rockwell Intern Corp)

Mar 1977

MSC-16268

Vol 1, No 4, p 615

Simple device spots opens and shorts during shock and vibration testing Device has excellent temperature stability and consistent timing accuracy Range of detected pulse widths, or time intervals is adjustable

B76-10558**HYDRODYNAMIC LUBRICATION OF FACE SEALS**

L P Ludwig and G P Allen

Mar 1977 See also NASA-TN-D-8101 (N76-21560), NASA-TN-D-8102 (N76-20484)

LEWIS-12710

Vol 1, No 4, p 616

Two companion reports describe possible primary-seal geometries and face-seal angular-misalignment geometry

B76-10559**IMPACT RESPONSE ANALYSES**

C S Bodley (Martin Marietta Corp), D M Warner (Martin Marietta Corp), and A C Park (Martin Marietta Corp)

Mar 1977

M-FS-23335

Vol 1, No 4, p 617

General-purpose computer program establishes dynamic response of two impacting elastic bodies each containing linear or nonlinear impact attenuation mechanism Program can be used for analysis of broad spectrum of impact motion response investigations

B76-10560**IMPACT OF A SOLID BODY WITH WATER**

06 MECHANICS

D A Kross C M Bishop (Boeing Co) B E Clingan (Boeing Co) J R Colson (Boeing Co), C J Heffron (Boeing Co), and C Wiser (Boeing Co)
Mar 1977

M-FS-23512 Vol 1, No 4, p 617
Rigid body three-degrees-of-freedom, digital-simulation program calculates dynamics and loads

B76-10561 DESIGN ANALYSIS OF RADIAL-INFLOW TURBINES

A J Glassman
Mar 1977

LEWIS-12684 Vol 1, No 4, p 618
Computer program performs velocity-diagram analysis required for determining geometry and estimating performance for radial-inflow turbines

B76-10562 THERMAL-RADIATION MODEL

W C Claunch G H Watson (Lockheed Missiles and Space Co) and A L Lee (Lockheed Missiles and Space Co)
Mar 1977

M-FS-23538 Vol 1, No 4, p 618
Central Cartesian coordinate system calculates thermal environment around rocket plume Radiative heat exchange between surfaces is calculated by Monte Carlo method

B76-10563 GENERAL INSTABILITY ANALYSIS

C J Bianca, A A Holston, Jr (Martin Marietta Corp) J R Lager (Martin Marietta Corp) and J M Toth, Jr (Martin Marietta Corp)
Mar 1977

M-FS-23407 Vol 1, No 4, p 619
HOLBOAT computer program provides instability analysis of inhomogeneous, anisotropic right-circular cylinder or segment under combined loading Program is based on Kirchhoff-Love hypothesis general anisotropic constitutive equations and Flugge's differential equations of equilibrium

B76-10564 TRANSPOSE OF FINITE-ELEMENT DATA

T Furuike (Rockwell Intern Corp)
Mar 1977

MSC-19644 Vol 1, No 4, p 619
TRANSPPOSE computer program examines single point of structural-analysis model under many loads Program helps in data reduction and analysis saves output for subsequent postprocessing, and reduces time required for structure analysis Essentially program transposes finite-element data from one loading condition for all element and node data to one-node-point data for all loading conditions

B76-10565 ESTIMATING SUBSONIC AERODYNAMIC CHARACTERISTICS OF COMPLEX PLANFORMS

J E Lamar R J Margason and B B Gloss
Mar 1977

LANGLEY-11047 Vol 1, No 4, p 619
Vortex-lattice FORTRAN program estimates subsonic aerodynamic characteristics of complex planforms and interacting lifting surfaces with separated flow around sharp edges

B76-10566 TRIMMED NONCOPLANAR PLANFORMS WITH MINIMUM VORTEX DRAG

J E Lamar
Mar 1977

LANGLEY-12121 Vol 1, No 4, p 620
Vortex-lattice subsonic method determines mean camber surface for trimmed noncoplanar planforms with minimum vortex drag Multiple surfaces can be designed together to yield trimmed configuration with minimum induced drag at some specified lift coefficient Program is applicable to isolated wings, wing-canard configuration tandem wing and wing-winglet configuration

B76-10567 ESTIMATING AIRCRAFT STATES

R C Wingrove
Mar 1977

ARC-10969 Vol 1, No 4, p 620
Computer program provides weighted least-squares estimates of aircraft states from measurements recorded during routine flight tests Program contains standard six-degree-of-freedom kinematic equations

B76-10568 STABILITY OF AN ELASTIC AIRPLANE

L L Erickson, P P Polentz A Dusto (Boeing Co) G Hink (Boeing Co), and S Shansen (Boeing Co)
Mar 1977

ARC-11086 Vol 1, No 4, p 621
FLEXSTAB computer program is used to evaluate trim state static and dynamic stability characteristics, inertial and aerodynamic loading, and elastic deformations of aircraft configurations at subsonic and supersonic speeds

B76-10569 INDEPENDENT TRAJECTORY DETERMINATION SYSTEM

M G Armstrong and I B Tomaszewski
Mar 1977

GSFC-11923 Vol 1, No 4, p 621
Stand-alone subsystem calculates flight data analytically or numerically System is orbit ephemeris generation program and is subsystem of comprehensive Goddard Trajectory Determination System (GTDS)

07 MACHINERY

B76-10114 CONCENTRIC-TUBE DIFFERENTIAL DRIVE

R E Marlow (Sperry Rand Corp)
Mar 1976

M-FS-22707 Vol 1, No 1, p 115
Remote manipulator consists essentially of gear shafts that are placed concentrically with bevel gears located at each joint Teleoperator's advantages include light weight accessibility of parts, continuous rotation of joints, possibility of underwater use, and possibility of miniaturization

B76-10115 IMPROVED AUTOMOBILE GAS TURBINE ENGINE

M G Kofskey T Katsanis, R J Roelke K L McLallin R Y Wong L F Schumann (USAAMRDL) and M R Galvas (USAAMRDL)
Mar 1976 See also NASA-TM-X-71714 (N75-24106) NASA-TM-X-71717 (N75-21633) NASA-TM-X-71719 (N75-24116)

LEWIS-12521 Vol 1, No 1, p 116
Upgraded engine delivers 100 hp in 3500 lb vehicle Improved fuel economy is due to combined effects of reduced weight reduced power-to-weight ratio increased turbine inlet pressure and improved component efficiencies at part power

B76-10116 EFFICIENT LOW STATIC-VOLUME WATER HEATER

R L Brown
Mar 1976

M-FS-22469 Vol 1, No 1, p 117
Calrod heating element is surrounded by matrix of fused sintered copper or brass balls and assembly is then installed in piping of water system As water flows through matrix, sintered balls cause turbulent flow and heating Applications include laundromats laboratories and photographic labs

B76-10117**CYCLICAL BIODIRECTIONAL ROTARY ACTUATOR**

W C Stange

Mar 1976

GSFC-11883, GSFC-11974, GSFC-11975 Vol 1, No 1, p 118

Thermally powered device flips magnetometer between one of two positions located 180 deg apart and permits instrument calibration. Pair of heat-extensible springs selectively rotate shaft from one position to other when electric heaters bonded to them are energized.

B76-10118**FIELD SAMPLING FINE-VACUUM SYSTEM**

E W Fickey (Bendix Corp) and D M Smoot (Bendix Corp)

Mar 1976

KSC-10596 Vol 1, No 1, p 119

Small portable pumping station, consisting of roughing pump, air cooled diffusion pump, and liquid nitrogen cold trap, permits onsite sampling followed by quantitative laboratory analysis of residual gases.

B76-10119**INTEGRAL FAN/WATER SEPARATOR**

R L Johnson (Garrett Corp)

Mar 1976

MSC-14756 Vol 1, No 1, p 120

Centrifugal force created by rotating fan wheel separates moisture from gas. Lightweight portable unit can be worn with pressurized suit where it will remove moisture that accumulates from breathing and perspiration.

B76-10120**CROSSWIND LANDING-GEAR POSITION INDICATOR**

R A Champine

Mar 1976

LANGLEY-11941 Vol 1, No 1, p 121

Position indicator for airplanes equipped with adjustable or automatic crosswind landing-gear systems prevents wheel misalignments.

B76-10121**POINTING CONTROL/ROLL POSITIONING MECHANISM**

W E Kohman (Perkin-Elmer Corp)

Mar 1976

M-FS-22809 Vol 1, No 1, p 122

Telescope mount provides torquing for a fine-pointing servosystem in both pitch and yaw. Use of flexure bearings in EPC (experiment pointing control) actuator package offers performance and reliability superior to that of other bearing configurations.

B76-10122**HAND FIN FOR SWIMMING**

H L Martin

Jun 1977

M-FS-21632 Vol 1, No 1, p 123

Paddle mounted on forearm aids propulsion and maneuverability and frees hand for work without interference.

B76-10244**TOOL REMOVES BRAZED FITTINGS**

W J Hurley (Martin Marietta Corp) and S E Nelson (Martin Marietta Corp)

Aug 1976

LANGLEY-10944 Vol 1, No 2, p 253

Device which removes fittings from thin-walled tubing will not accidentally bond to fitting, nor will it cause tube wall to melt. Key feature is the use of expendable split-ring heat sink insert. Technique is applicable to fitting stubs of all sizes and wall thicknesses.

B76-10245**MECHANICAL POSITIONER**

G A Tuthill (Rockwell Intern Corp) and G O Magnusson (Rockwell Intern Corp)

Aug 1976

MSC-15817**Vol 1, No 2, p 254**

Manually controlled positioner designed for castor wheels on heavy equipment employs self-engaging self-releasing friction cam that engages with and moves wheel. Adjustable stops control degree of pressure exerted on wheel, and lock pin holds device in neutral steering configuration.

B76-10246**RADIAL LEVEL**

D L Posey

Aug 1976

LANGLEY-11982 Vol 1, No 2, p 255

Actual angle indicator is a liquid captured inside cylindrical transparent tube that is radially mounted around or under 360 deg scale. Device is functional and accurate within full 360 deg spectrum and instantly determines any surface angle without making adjustments since it has no moving parts.

B76-10247**SPLIT-RING SEAL**

E A Gallo (Kentrion Hawaii Ltd)

Aug 1976

MSC-14304 Vol 1, No 2, p 256

Gland-type seal may be used with hydraulic and pneumatic actuators and similar equipment. It is designed for applications with partial vacuums and requires little space for installation and infrequent servicing.

B76-10248**ROTARY BROACHES**

C Libertone (Rockwell Intern Corp)

Aug 1976

M-FS-23374 Vol 1, No 2, p 257

Tool is used for counterboring or backspot facing recesses for boltheads or nuts in difficult-to-reach locations, such as near webs, bosses or flanges. Two versions of tool have been designed, one for roughing out and another for finishing.

B76-10249**VEHICLE LOAD-EQUALIZATION SYSTEM**

W K Creasy

Aug 1976

MSC-12466 Vol 1, No 2, p 258

System uses cables and associated pulleys to form closed-loop suspension system for terrain compensation. Loop causes reactions at each of three wheels in response to loading at remaining wheel. Simplicity of design should be of interest to designers and manufacturers of construction equipment and off-road vehicles.

B76-10250**LARGE-DIAMETER FASTENERS OF CRES ALLOY**

J F Charles (Rockwell Intern Corp) and M L Marke (Rockwell Intern Corp)

Aug 1976

MSC-19313 Vol 1, No 2, p 259

Double-hex bolthead allows bolts of high strength corrosion-resistant steel (CRES) to be made in diameters up to 1-1/4 in. Design allows 12-point tension heads to be cold formed to retain required minimum tensile strength of 220 000 psi and to retain high fracture strength.

B76-10251**HIGH-TEMPERATURE HEATING ARRAY**

H E Christensen (McDonnell-Douglas Corp) and B G Cox (McDonnell-Douglas Corp)

Aug 1976

MSC-14287 Vol 1, No 2, p 260

Heating array for thermally conditioning reusable surface insulation panels of thermal protection systems is capable of heating samples to 2500 F at pressures ranging from 0.5 to 760 torr. System uses low cost, easily replaceable graphite heating elements which give more uniform heating than quartz lamps.

B76-10252**LOAD-REGULATING LATCH**

07 MACHINERY,

W T Appleberry (Rockwell Intern Corp)
Aug 1976

MSC-19535

Vol 1, No 2, p 261

Device is designed for remotely latched doors or for doors on which latch cannot be reached for adjustment after door is closed. It automatically regulates latch tension load, prevents overload and load shares in multiple latch system.

B76-10253

SOLAR CONCENTRATOR/ABSORBER

G F VonTiesenhausen
Aug 1976

M-FS-23428

Vol 1, No 2, p 262

Collector/energy converter consisting of dual-slope optical concentrator and counterflow thermal energy absorber is attached to multiaxis support structure. Efficient over wide range of illumination levels, device may be used to generate high temperature steam, serve as solar powered dryer or power absorption cycle cooler.

B76-10254

PROPOSED LOW-TEMPERATURE SOLAR ENGINE

J A Peoples and G B Kearns
Aug 1976

M-FS-23403

Vol 1, No 2, p 263

Engine, proposed for conversion of Sun's heat to motion without need for heat pumps and associated equipment, uses expansion and contraction of aluminum rod to drive tow-out-of-phase windlasses. Linear displacement of 0.076 cm in rod will exert sufficient force to drive pumps, generators and compressors.

B76-10255

CONICAL DIFFUSER FOR FUEL CELLS

D W Craft (GE)
Aug 1976

MSC-14026

Vol 1, No 2, p 264

Diffuser is inserted into inlet manifold, producing smooth transition of flow from pipe diameter to manifold diameter. Expected pressure gradient and resulting cell-to-cell temperature gradient are reduced. Outlet manifold has nozzle insert that reduces exit losses.

B76-10256

HORIZONTALLY-MOUNTED SOLAR COLLECTOR

D H Black
Aug 1976

M-FS-23349

Vol 1, No 2, p 265

System consists of three major components: vertical deflector assembly, stationary reflector and motor driven tracking mechanism. Deflector assembly directs incident incoming energy to a vertical direction, using series of horizontally mounted vanes. Energy is then redirected via reflector to fixed collector.

B76-10257

HAND AND POWER TOOLS

Innovator not given. Aug 1976. See also NASA-SP-5976(06)

HQN-10892

Vol 1, No 2, p 266

Report contains descriptions of twenty-five tools and tooling advancements developed for industrial and small machine shop adaptation.

B76-10405

HIGH-TORQUE OPEN-END WRENCH

H Behimer, J M Dame and A Giandomenico
Jan 1977

NPO-13541

Vol 1, No 3, p 437

Two-element tool is designed for tightening closely-spaced nuts on adjacent tubing.

B76-10406

FRAME FOR DAYLIGHT PHOTOCOPYING

J W Dalton
Jan 1977

KSC-11026

Vol 1, No 3, p 438

Inexpensive fixture makes quick copy of picture or photograph.

film positive or negative without darkroom. Device holds four-by-five inch instant-developing Polaroid 58 or 55 (or equivalent) film.

B76-10407

SLOTTED BOLTS AND STUDS FOR VACUUM SYSTEMS

F E Zellner
Jan 1977

LEWIS-10391

Vol 1, No 3, p 439

Modified device reduces outgassing from installed fixtures.

B76-10408

SOFT SEAT A-N FITTING FOR VACUUM USE

A B Szuhai
Jan 1977

LEWIS-10130

Vol 1, No 3, p 439

Commercially available fittings are modified to produce leaktight connections at low cost.

B76-10409

PRECISION CENTERING VISE

J A Thompson (Bendix Corp)
Jan 1977

KSC-11041

Vol 1, No 3, p 440

Lightweight device automatically aligns stainless-steel tubing and fittings regardless of differing diameters prior to joining via induction brazing. Device is useful in remote areas where existing supports or walls cannot be used to anchor tubing holder.

B76-10410

SUSTAINED-ARC IGNITION SYSTEM

A G Birchenough
Jan 1977

LEWIS-12444

Vol 1, No 3, p 440

Process results in long-duration sparks which allow leaner, cleaner combustion. Procedure is not limited by available energy-storage devices and can produce continuous spark of as long duration as desired for optimum engine operation and pollution reduction. System can be modified to operate on engines not using distributor points and can be used with conventional Kettering ignitions.

B76-10411

POWERED WHEEL FOR AIRCRAFT

M J Long, S C Irick and R K VanAusdal (Bendix Corp)
Jan 1977. See also B75-10258

LANGLEY-12053

Vol 1, No 3, p 441

Single integral unit includes motor, gearbox, and clutch. Device has two-speed capability, fits within aerodynamic contours of aircraft, operates with onboard power source, does not interfere with normal landing gear functions, reduces use of regular brakes in congested areas and provides locomotion and supplementary braking capability.

B76-10412

SAFETY BRAKE FOR TAPE REELS

C E Carle
Jan 1977

GSFC-11960

Vol 1, No 3, p 442

All-mechanical device senses end of tape and stops reel, even in event of electronic system failure. Assembly includes stop to prevent brake from overriding tape. Recentering mechanism returns brake to neutral position after torque is removed from reels.

B76-10413

IMPROVED ROAD HANDLER

P H Broussard, Jr, J L Burch and C Mueller
Jan 1977

M-FS-23233

Vol 1, No 3, p 443

Rope-and-pulley device unwinds at rate fairly independent of weight attached to it. Device is easily installed and fabrication is economical. It is particularly suitable as emergency escape device.

B76-10414**DOOR LATCH WITH THROUGH-ACCESS HOLE**

W F Dixon (Rockwell Intern Corp), R P Pritchard (Rockwell Intern Corp), and R E Woodfill (Rockwell Intern Corp)
Jan 1977

MSC-19634**Vol 1, No 3, p 444**

Innovation allows fully-loaded container to be fastened to rear wall of recessed area. Assembly is designed to carry shear and tension loads. Retractable handle allows for visual verification if door is locked or unlocked.

B76-10415**GAS BOOST COMPRESSOR**

L S Terp (Garrett Corp)
Jan 1977

MSC-14757**Vol 1, No 3, p 445**

Device, driven by low pressure gas supply, requires fewer controls and valves than conventional devices. Device can boost compression four times initial pressure.

B76-10416**DYNAMIC LOAD ATTENUATOR**

P N Crum (Rockwell Intern Corp)
Jan 1977

MSC-17472**Vol 1, No 3, p 446**

Instrument consists of special bolt head that cuts material from splined washer. Required shear and tensile forces absorb kinetic energy. Cut-away material is retained by shearing action making device useful where production of loose metal particles is not acceptable.

B76-10417**SPIN-RATE CONTROL DEVICE**

L J Nolte (Hughes Aircraft Co)
Jan 1977

ARC-10884**Vol 1, No 3, p 446**

Innovation eliminates need for driver sensor and interconnecting logic circuits. Device combines simplicity of fixed-fin concept with precise rate control provided by active flight control system.

B76-10418**HEAVY-DUTY MECHANICAL SEQUENCER**

W T Appleberry (Rockwell Intern Corp)
Jan 1977

MSC-19536**Vol 1, No 3, p 448**

Modular sequential mechanism allows output stroke angle and location of start/stop points to be pre-programmed. Output torques are higher than typical Geneva mechanisms. They are constant throughout cycle, and have a moment equal to that of power source.

B76-10419**ENERGY-ABSORBING ATTENUATOR**

P Galovich (Rockwell Intern Corp) and J C Wilkowski (Rockwell Intern Corp)
Jan 1977

MSC-17473**Vol 1, No 3, p 449**

Simple inexpensive one-shot load device uses thin-walled soft-metal tube to absorb kinetic energy by controlled buckling.

B76-10420**JET ENGINE STATOR-BLADE REMOVAL TOOL**

D D Diamond (Serv-Air, Inc)
Jan 1977

MSC-16000**Vol 1, No 3, p 450**

Instrument removes individual stator-blade segments from J-85 jet engine without deforming blade or engine casing.

B76-10570**NASA TECHNOLOGY UTILIZATION HOUSE**

Innovator not given Mar 1977

LANGLEY-12134**Vol 1, No 4, p 625**

Following systems and features which are predicted to save approximately \$20,000 in utility costs over twenty year period are incorporated into single-level contemporarily designed energy

efficient residential structure solar heating and cooling energy efficient appliances water recycling security, smoke and tornado detectors, and flat conductor electrical wiring.

B76-10571**ECONOMICAL SOLAR-HEATING FOR HOMES**

J W Allred J M Shinn, Jr C E Kirby and S R Barringer
Mar 1977 See also NASA-TM-X-3294 (N76-27671)

LANGLEY-12135**Vol 1, No 4, p 626**

Do-it-yourself supplementary solar-heating system is available for purchase at approximately \$2,000. Report describes design, construction testing and economic analysis of low-cost solar heating system.

B76-10572**LEVELING APPARATUS FOR PRECISION INSTRUMENTS**

R W Delaplaine and D L Ossolani
Mar 1977

ARC-10981**Vol 1, No 4, p 627**

Simple inexpensively-constructed device provides shock-and-vibration-resistant support.

B76-10573**LOW-PRESSURE-GAS SAMPLING PUMP**

P L Fontecchio (Metal Bellows Corp)
Mar 1977

ARC-10941**Vol 1, No 4, p 628**

Bellows pump raises sampled-gas pressure to level compatible with available compressors.

B76-10574**DISPENSING A MEASURED QUANTITY OF A LIQUID**

T A Cook (McDonnell-Douglas Corp) and H Cheibe (McDonnell-Douglas Corp)
Mar 1977

M-FS-21163**Vol 1, No 4, p 629**

Hand-held pushbutton-controlled dispenser ejects predetermined amount of fluid. Each cycle is recorded on counter. All seals in contact with cooler are food grade. No maintenance is required during life of unit.

B76-10575**OMNIDIRECTIONAL WHEEL**

J F Blumrich
Mar 1977

M-FS-21309**Vol 1, No 4, p 630**

Device with rotating rim elements provides mobility in any direction for ground vehicle without requiring change of orientation relative to vehicle.

B76-10576**LONG-LIFE BALL-VALVE DESIGN**

D F Ferris (Rockwell Intern Corp) and W A Gillon, Jr (Rockwell Intern Corp)
Mar 1977

M-FS-19282**Vol 1, No 4, p 631**

Eccentric mounting of ball on stem reduces wear on valve seal.

B76-10577**RECORDING-TAPE POSITION SENSOR**

G C Schoppet
Mar 1977

GSFC-12056**Vol 1, No 4, p 631**

Device uses tachometer pulses from capstan and reset pulse from one reel to sense count of tach pulses per revolution of reel. Number of pulses is direct measurement of tape stack radius and is independent of tape speed or direction.

B76-10578**IMPROVED SHELF FOR ELECTRONIC MODULES**

R A Marzek
Mar 1977

NPO-13158**Vol 1, No 4, p 632**

Self-aligning slide assembly improves air flow. Alignment accuracy is incorporated into assembly at time of fabrication.

reducing requirement for mounting-hole location accuracy Amount of labor needed for installation necessary machining hardware, and number of mounting points are reduced from previous support system Load-bearing capability is built into mounting platform

08 FABRICATION TECHNOLOGY

B76-10123

LOW-COST SOLAR REFLECTORS

M J Argoud J Jolley, and W L Walker
Mar 1976

NPO-13707

Vol 1, No 1, p 125

Foamed glass provides an inexpensive lightweight substrate for reflective elements used in solar energy converters Material withstands temperature from -450 to 800 degrees Fahrenheit and pressures up to 100 psi

B76-10124

BATTERY-CELL THERMAL TEST FACILITY

J A Sanders (Martin Marietta Corp)
Mar 1976

M-FS-23040

Vol 1, No 1, p 126

Vacuum-enclosed system is used to analyze instantaneous thermal and electrical characteristics of batteries Data can be used to determine efficiency and provide for more effective utilization of available power

B76-10125

UNIFORM SOLAR CELLS

Innovator not given (Northrop Serv, Inc) Mar 1976

GSFC-11941

Vol 1, No 1, p 127

Solar cells used in radiation sensors can be efficiently matched by individual trimming Strip of aluminized Mylar is used to adjust cell output to within required tolerances Method is faster than individual selection of matched cells

B76-10126

STOPPING SMALL LIQUID LEAKS

C R Gille (Boeing Co) and J R Schanbacher (Boeing Co)
Mar 1976

KSC-10667

Vol 1, No 1, p 127

Technique helps locate minute liquid leaks in fittings of petroleum-base fuels

B76-10127

COMBINED JOINING PROCESS FOR DISSIMILAR METALS A CONCEPT

C S Beuyukian (Rockwell Intern Corp) and M J Mitchell
(Rockwell Intern Corp)
Mar 1976

MSC-19323

Vol 1, No 1, p 128

Combined brazing and diffusion bonding process for aluminum and stainless steel saves time and simplifies processing Tests show that resulting bond can withstand internal pressures up to 1 000 psi

B76-10128

NONDESTRUCTIVE INSPECTION OF MULTILAYERED INSULATION

J A Zelik (McDonnell-Douglas Corp)
Mar 1976

M-FS-22191

Vol 1, No 1, p 129

Radio frequency techniques are used to evaluate multilayered cryogenic insulation Electromagnetic inspection approach assesses metal loss and layer density

B76-10129

RELIABILITY OF HYBRID MICROCIRCUIT BONDING

S V Caruso D L Kinser S M Graff and R V Allen
Mar 1976

M-FS-23358

Vol 1, No 1, p 130

Microcircuit failure due to differential thermal expansion depends on technique used to mount components to substrate Effects of differential thermal expansion on ceramic chip capacitors are investigated for various bonding techniques

B76-10130

ROLL-FORMING TUBES TO HEADER PLATES

K Kramer
Mar 1976

LEWIS-10513

Vol 1, No 1, p 131

Technique has been developed for attaching and sealing tubes to header plates using a unique roll-forming tool Technique is useful for attaching small tubes which are difficult to roll into conventional grooves in header plate tube holes and for attaching when welding brazing, or soldering is not desirable

B76-10131

METAL STRUCTURES WITH PARALLEL PORES

J M Sherfey
Mar 1976

GSFC-10984

Vol 1, No 1, p 132

Four methods of fabricating metal plates having uniformly sized parallel pores are studied elongate bundle wind and sinter extrude and sinter and corrugate stack Such plates are suitable for electrodes for electrochemical and fuel cells

B76-10132

METALWORKING METHOD FOR COMPOSITES

A P Divecha (Commonwealth Sci Corp)
Mar 1976

M-FS-23354

Vol 1, No 1, p 133

Effective fabrication methods for aluminum/boron and aluminum/graphite composites have been investigated Drawing and rolling were found to be adaptable to Al/B fabrication Although graphite composites are not amenable to standard metal processing methods it may be possible to reduce fabrication costs of Al/C through electron-beam heating

B76-10258

RF SHAPING OF SILICON RIBBON

D A Pelhank (McDonnell-Douglas Corp) R D Rochat
(McDonnell-Douglas Corp) and W Marx (McDonnell-Douglas Corp)
Aug 1976

M-FS-23424

Vol 1, No 2, p 269

Electromagnetic force generated by radiofrequency coil is used to shape molten silicon Shaping coil surrounds melt near solid-liquid interface and induces current in surface region of melt nearly equal to but opposite coil current

B76-10259

IGFET/SOI FABRICATION METHOD

W R Feltner
Aug 1976

M-FS-23312

Vol 1, No 2, p 270

Technique increases switching speeds shortens channel length, reduces parasitic capacitance and gate overlap and minimizes gate-to-channel capacitance The p and n sections may be reversed allowing fabrication of complementary devices

B76-10260

SOLAR CELL ELECTRICAL CONNECTIONS

H S Rauschenbach (TRW Inc) and H G Mesch (TRW Inc)
Aug 1976

LEWIS-12293

Vol 1, No 2, p 272

Study was conducted to find best methods of attaching pure silver and silver plated Kovar (trademark) interconnect ribbons to silicon solar cells with titanium-silver solderless contacts Investigations include thermocompression bonding parallel-gap welding and ultrasonic welding

B76-10261

EPITAXIAL GROWTH OF GA1-XALXAS ON GAP

J M Woodall (IBM) and G I Farmer (IBM)
Aug 1976

GSFC-11826 Vol 1, No 2, p 274

Technique suitable for monolithic device fabrication methods permits growth of LED structures on GaP substrates by liquid-phase epitaxial method thus obviating needs for growing thick layers and for removing substrates. High efficiency infrared LEDs can be developed as pumping sources for Nd YAG lasers

B76-10262
METHOD OF REMOVING DRILLING CHIPS

F E Ransom (Rockwell Intern Corp)

Aug 1976

M-FS-19235 Vol 1, No 2, p 275

Special chuck directs mixture of pressurized air and water through drill bit thus removing chips during boring of long, large diameter holes

B76-10263
POLISHING GOLD AND GOLD-ALLOY CRYSTALS

J P Doty (Eagle-Picher Ind Inc)

Aug 1976

M-FS-22800 Vol 1, No 2, p 276

Sawed cross-section samples are rough polished at minimum pressure with 14 micron grit. After saw marks are polished away polishing grit is changed to 0.05 micron. When smooth appearance is attained surface is then chemically polished by hand in dust free room

B76-10264
SOLDERING HIGH-IMPEDANCE NICHROME WIRE

M Spruill (Rockwell Intern Corp) and P R Callen (Rockwell Intern Corp)

Aug 1976

M-FS-1457 Vol 1, No 2, p 276

Nickel wire segment allows Nichrome wire to be soldered without changing its electrical characteristics

B76-10265
DIFFUSION BRAZING NICKEL-PLATED STAINLESS STEEL

C S Beuyukian (Rockwell Intern Corp) and M J Mitchell (Rockwell Intern Corp)

Aug 1976

MSC-19322 Vol 1, No 2, p 277

To bond parts sandwich assembly is made up of aluminum core aluminum face sheet with brazing alloy interface and nickel plated stainless steel part. Sandwich is placed between bottom and top glide sheet that is placed in stainless steel retort where assembly is bonded at 580 C

B76-10266
ULTRA-LIGHTWEIGHT PRESSURE VESSELS

W W Schmidt (Brunswick Corp) and R O Hawkins (Brunswick Corp)

Aug 1976

MSC-14983 Vol 1, No 2, p 278

Composite tanks fabricated from two metal spheres which are pressure welded and then overwrapped with plastic composite are 66 percent lighter than similar all-metal vessels. Overwrap minimizes shrapnel effects shifts failure mode to that of cyclic leakage and withstands minimum burst pressure

B76-10267
STRIPPER FOR SILICONE POLYMERS

B B Williams (Rockwell Intern Corp)

Aug 1976

MSC-19380 Vol 1, No 2, p 278

Potassium hydroxide in ethyl alcohol solution can strip away coatings adhesives and encapsulants without damaging substrates

B76-10268
IMPROVED PHOTOCHEMICAL ETCHING OF STAINLESS STEEL

G E Lotgering (Rockwell Intern Corp)

Aug 1976

MSC-19728 Vol 1, No 2, p 279

Improved process yields tougher and more adherent coating

that withstands longer exposure to acid etch spray without cracking or flaking and permits etching to depth of 0.127 cm

B76-10269
ELECTRON-BEAM WELDER ALINEMENT

E L Whiffen (Rockwell Intern Corp)

Aug 1976

MSC-19642 Vol 1, No 2, p 279

Parts are easily and quickly positioned in welding vacuum chamber with use of inexpensive thin metal-foil plate

B76-10270
OVERHEAD TRAY FOR CABLE TEST SYSTEM

K T Saltz (Rockwell Intern Corp)

Aug 1976

MSC-19488 Vol 1, No 2, p 280

System consists of overhead slotted tray series of compatible adapter cables, and automatic test set which consists of control console and cable-switching console. System reduces hookup time and also reduces cost of fabricating and storing test cables

B76-10271
3-D FOAM ADHESIVE DEPOSITION

C R Lemons (McDonnell-Douglas Corp) and O K Salmassy (McDonnell-Douglas Corp)

Aug 1976

M-FS-22739 Vol 1, No 2, p 281

Bonding method which reduces amount and weight of adhesive is applicable to foam-filled honeycomb constructions. Novel features of process include temperature-viscosity control and removal of excess adhesive by transfer to cellophane film

B76-10272
SYNCHRONIZED BACKSIDE-WELD FOLLOWER

W F Iceland (Rockwell Intern Corp) and W M Beaupre (Rockwell Intern Corp)

Aug 1976

M-FS-24454 Vol 1, No 2, p 282

For curved-path tracking with respect to power input side system employs two sets of infrared detectors on droptrough side for sensing. First set functions with closed-loop motor control system in azimuthal direction and second set with its closed-loop motor control system positions elevation

B76-10273
ABLATIVE-FILLED HONEYCOMB COMPOSITES

H L Linebarier (Martin Marietta Corp)

Aug 1976

LANGLEY-11180 Vol 1, No 2, p 283

Two techniques reduce fabrication cost and complexity. Net surface molding permits ablatives insulators with sculptured tapers to be produced over substrate having unpredictable irregularities. Subsurface molding results in ablatives surface below honeycomb

B76-10274
COMPOUND SOLDER JOINTS

R I Batista (TRW Inc) and R B Simonson (TRW Inc)

Aug 1976

LANGLEY-11444 Vol 1, No 2, p 284

Joining technique prevents contamination may be used to join dissimilar metal tubes minimizes fluid and gas entrapment expedites repairs and can yield joints having leakage rates less than 0.000001 standard cubic cm He/min. Components of joint are solder sleeve two solder rings Teflon sleeve and tubing to be joined

B76-10275
CLEANING CARBON STEEL

V Maynard (Bendix Corp)

Aug 1976

KSC-10689 Vol 1, No 2, p 285

Increased etch rate using 8% citric acid actually reduces total amount of material etched away by eliminating reprocessing that was frequently required. Time required in citrosolve solution is reduced and more protective passive coating is provided

08 FABRICATION TECHNOLOGY

B76-10276

REPAIR OF FUSED SILICA PLATENS

R M Heisman (Rockwell Intern Corp) and C S Beuyukian (Rockwell Intern Corp)

Aug 1976

MSC-19713

Vol 1, No 2, p 286

Refill/leveling technique which consists of spreading slurry refill material to affected areas and then sanding until surfaces are flat extends service life of platen up to 50 production cycles between downtime

B76-10277

FLEXIBLE FITTING FOR FLUID LINES

S L Barajas (Rockwell Intern Corp)

Aug 1976

MSC-17780

Vol 1, No 2, p 287

Tube fitting, consisting of movable tubular section containing two spring pressure Teflon actuated low friction seals two standard connectors and two hexagonal retaining nuts, provides flexible joint that allows axial and rotational motion

B76-10278

BOROSILICATE GLASS-TO-KOVAR TUBE BONDING

R F Harris

Aug 1976

GSFC-12077

Vol 1, No 2, p 288

Two-micron-diameter inlet leak, useful in mass spectrometry applications minimizes gas sample distortion that occurs between sample and leak is easily joined to spectrometer inlet system and withstands unusual gas pressures and temperatures

B76-10279

TECHNIQUE FOR JOINING METAL TUBING

H W Wright (TRW Inc)

Aug 1976

ARC-10946

Vol 1, No 2, p 289

Uniform wall thickness and uninterrupted heat transfer are achieved by using shaped metal insert as wall material for joint. Insert acts as support during brazing after which excess material is ground away to bring joint to original tubing size

B76-10280

BRAZE/REBRAZE PROCESS FOR CRES STEEL

C E Silverman (Rockwell Intern Corp)

Aug 1976

MSC-19600

Vol 1, No 2, p 289

Using induction brazing process with 85-Au/16.5-Cu/2.0-Ni braze alloy joints in 21-6-9 CRES steel tubing can be reworked up to seven times thus significantly reducing cost of fabrication repair and part replacement

B76-10281

AGE-FORMING ALUMINUM PANELS

G I Baxter (General Dynamics Corp)

Aug 1976

MSC-12648

Vol 1, No 2, p 290

Contoured-stiffened 63 by 337 inch 2124 aluminum alloy panels are machined in-the-flat to make integral tapered T-capped stringers, parallel with longitudinal centerline. Aging fixture, which includes net contour formers made from lofted contour templates has eggcrate-like structure for use in forming and checking panels

B76-10282

FRACTURE MECHANICS FOR WELD ACCEPTANCE

C A Bolstad (Martin Marietta Corp) and L W Loechel (Martin Marietta Corp)

Aug 1976

M-FS-23360

Vol 1, No 2, p. 291

Criteria include specifications for allowable cracklike defect lengths undercut, underfill suckback mismatch, peaking in butt welds, root penetration weld beam dimensions lap joint dimensions and acceptable defect sizes and densities for double and single fillet welds

B76-10283

MACHINING TITANIUM ALLOYS

I A Sutherland

Aug 1976

M-FS-23006

Vol 1, No 2, p 291

Study suggests ways of reducing chatter, increasing productivity, and reducing tool wear. Report also describes static and dynamic cutting tests and tool materials and finishes

B76-10284

ANNEALING STRAINED ALLOY 718

T J Morrison (Rockwell Intern Corp)

Aug 1976

M-FS-19242

Vol 1, No 2, p 292

Report shows that grain coarsening in Alloy 718 can result in greatly reduced resistance to weld-heat-produced zone fissuring, especially when final grain size is ASTM 2. Tensile tests and metallographic examination of bend test specimens provide necessary data

B76-10421

MODULAR MULTIPURPOSE PANEL SUPPORT

M R Daun (Rockwell Intern Corp) and L A Maring (Rockwell Intern Corp)

Jan 1977

MSC-19641

Vol 1, No 3, p 453

Inexpensive set of modular semirigid box structures serve as multipurpose support for thin panels. Fixture holds several different interchangeable two-part adjustable contour-board subassemblies. Combining modules allows for accommodation to any length skin or panel

B76-10422

CONTAINERLESS PROCESSING OF TUNGSTEN

N Beser (GE) R T Frost (GE) E C OKress (GE), D J Rutecki (GE) and G Wouch (GE)

Jan 1977

M-FS-23509

Vol 1, No 3, p 454

Simultaneous electromagnetic levitation and electron-beam heating allow contaminationless melting of tungsten. Possible application for this technique is production of X-ray targets

B76-10423

ACOUSTIC-ENERGY SHAPING OF MELTABLE METALS

D D Elleman and T G Wang

Jan 1977

NPO-13802

Vol 1, No 3, p 455

Containerless shaping technique is applicable to machining metals technology. Process improves quality of melted metals by reducing introduction of impurities from container walls or floor

B76-10424

ALL-TANTALUM ELECTROLYTIC CAPACITOR

G E Green Jr (Aerotron Inc)

Jan 1977

M-FS-23462

Vol 1, No 3, p 456

Device uses single-compression tantalum-to-tantalum seal. Single-compression seal allows better utilization of volume within device. As result of all-tantalum case and lengthened cathode electrical parameters, particularly equivalent series resistance and capacitance stability improved over silver-cased capacitor

B76-10425

LOW-PRESSURE LOW-TEMPERATURE MOLDING PROCESS

E L Bowman (Rockwell Intern Corp)

Jan 1977

MSC-19778

Vol 1, No 3, p 457

Use of expanding rubber mandrel allows for bonding of graphite/epoxy laminated parts in oven instead of expensive autoclave. Heavy-duty two-piece aluminum mold limits deflection. Manipulation of resin contact by precise control of mandrel-generated pressure eliminates complex bleeder system

B76-10426

FUEL-CELL POWERPLANT INSULATION

R J Guthrie (United Technologies Corp)

Jan 1977

MSC-16012 Vol 1, No 3, p 458

Multilayer lightweight, flexible, thermal blanket is optimized for minimum weight and heat loss

B76-10427

REDUCED COSTS FOR SOLAR-CELL MODULES

A F Forestieri and E Anagnostou

Jan 1977

LEWIS-12185 Vol 1, No 3, p 459

Production expenses are decreased by embossing encapsulating plastic film to position and secure cells Electric circuit is printed on plastic film simultaneously with cell encapsulation process Procedure can be used with standard-contact and wraparound contact cells

B76-10428

IMPROVED BONDING OF HONEYCOMB PANELS

S A Sobkiewicz (Rockwell Intern Corp)

Jan 1977

MSC-19560 Vol 1, No 3, p 459

Technique using angular metal braces bonded onto panels lowers construction costs Technique improves overall structural strength decreases assembly time, and avoids wear points created by bolts and rivets

B76-10429

FABRICATION AND APPLICATIONS OF ELECTRETS

P K C Pillai and E L Shriver

Jan 1977

M-FS-23437 Vol 1, No 3, p 460

Permanently charged dielectrics can be made less expensively faster and more effectively using improved techniques and materials Methods include charge injection Tesla-coil charging and molten spray Possible uses include pollution control low-power sensors and illumination control

B76-10430

CLEANING LARGE TANKS AND GAS BOTTLES

I D Smith (White Sands Test Facility)

Jan 1977

MSC-14966 Vol 1, No 3, p 461

Distillation technique using vapor solvent trichloromonofluoromethane is economical effective and eliminates need to enter tank thus reducing risk of further contamination Solvent can be purified for reuse

B76-10431

GRAPHICAL METHODS FOR VARIABLE SAMPLING PLANS

K Teramura (Rockwell Intern Corp)

Jan 1977

MSC-19279 Vol 1, No 3, p 462

Simplified technique can be done quickly and without machine assistance Method provides more accurate quality-level information for given sample sizes

B76-10432

CONTROLLED LINEAR CLAMPER/LOADER

R M Steudl

Jan 1977

GSFC-12105 Vol 1, No 3, p 463

Pneumatic fixture can be used to clamp odd-shaped parts to non-uniform surface Device can be made from nonmagnetic materials for use in magnetic field test environments It also applies uniform load over clamped surface

B76-10433

HOT-WIRE TILE REMOVAL TOOL

J W Holt (Rockwell Intern Corp)

Jan 1977

KSC-11043 Vol 1, No 3, p 464

Cheesecutterlike device uses electrically heated wire to slice through thermosetting embedment Technique does not damage tile or create unwanted debris in work area

B76-10579

FORMING HARD ALUMINUM IN COMPLEX SHAPES

I J Wilson (Rockwell Intern Corp)

Mar 1977

MSC-19693 Vol 1, No 4, p 635

Three step procedure consisting of annealing cold working and precipitation heat treatment converts soft temper aluminum to T8 aluminum

B76-10580

Vol 1, No 4, p 636

ELECTRIC HEATING FOR METAL SURFACE HARDENING

N L Lockman (Rockwell Intern Corp)

Mar 1977

M-FS-19268

Electrical element heats only desired area and permits precise control of temperature and cooling rate Process serves as alternative to flame hardening for treating localized areas

B76-10581

YIELD-PRESSURE DETERMINATION

M E Wakefield (Martin Marietta Corp)

Mar 1977

MSC-14655 Vol 1, No 4, p 636

Stress/strain relationship of complex-shape vessel is recorded under hydrostatic pressure Technique is used to test pressurized gas cylinders and tubular transition joints made of dissimilar metals and to determine burst or system-failure pressures

B76-10582

CRYSTAL ORIENTATION FOR SOLID-STATE PHOTO LITHOGRAPHY

D P Marinelli (RCA)

Mar 1977

LANGLEY-11940 Vol 1, No 4, p 637

Method determines desirable direction to apply photoresist mask when fabricating semiconductor lasers Method can be applied to finished wafer without affecting device yield

B76-10583

PARYLENE COATING FOR CIRCUIT COMPONENTS

M J Berkebile R J Holbrook (Hughes Aircraft Co) and F W Oberin (Hughes Aircraft Co)

Mar 1977

M-FS-23450 Vol 1, No 4, p 638

Inexpensive internal coating improves reliability of plastic-packaged parts Coating protects device from effects of humidity and heat and acts as barrier between device and harmful substances generated by plastic-packaging material

B76-10584

INEXPENSIVE TAGS FOR TUBES OR CABLES

A J Fakolt

Mar 1977

LEWIS-12676 Vol 1, No 4, p 638

Split brass paper fasteners are used to identify tubes and cables in environments in which standard adhesive-backed identification tags do not adhere

B76-10585

RIGID CABLE SUPPORT FOR BLIND INSTALLATIONS

J R Abbott (Rockwell Intern Corp)

Mar 1977

MSC-19473 Vol 1, No 4, p 639

Mechanical support structure originally designed for use with electrical cables can support hydraulic pneumatic and cryogenic lines where bends are required assemblies are inaccessible and conduits are impractical Support is also light in weight and offers means of damping vibration

08 FABRICATION TECHNOLOGY

B76-10586

ELASTROSTATIC-DISCHARGE DAMAGE TO SEMICONDUCTORS

E R Freeman Jr (Martin Marietta Corp) and J R Beall (Martin Marietta Corp)

Mar 1977

LANGLEY-11739

Vol 1, No 4, p 640

Failure mechanisms test techniques and quality control procedures for difficult-to-detect class of failures have been devised. Test circuit provides electrostatic discharge similar to those encountered in production situation and assists in evaluation of susceptibility of specific circuits and devices.

B76-10587

TRANSDUCER BONDING KIT

R M Roush, Jr (Rockwell Intern Corp) D A Lott (Rockwell Intern Corp) and A R Keir (Rockwell Intern Corp)

Mar 1977

MSC-19690

Vol 1, No 4, p 641

Inexpensive kit improves bond quality, saves time and is used in hard-to-reach areas. Kit provides precise pressure loading and allows pressure to be monitored during curing cycle.

B76-10588

EXPLOSIVE-SEAM WELDING SEALS LARGE PRESSURE VESSELS

L J Bement

Mar 1977. See also B72-10002, B73-10180

LANGLEY-12132

Vol 1, No 4, p 642

Simple single-step operation hermetically seals aluminum, brass, steel, copper, and titanium vessels.

B76-10589

VACUUM HOLDDOWN FIXTURE

P P Zebus (Rockwell Intern Corp) and P N Packer (Rockwell Intern Corp)

Mar 1977

MSC-19686

Vol 1, No 4, p 643

Variable-contour jig supports concave or convex objects.

B76-10590

VISUAL PROJECTION RETICLE

R F Haines

Mar 1977

ARC-10976

Vol 1, No 4, p 644

Small lightweight device visually superimposes visual-sensitivity and response contours on displays and instrument panels. Optical system provides 45 deg arc/diameter field of view; however, special wide-angle optics can be substituted without significant size or weight penalty.

B76-10591

ANTIREFLECTION COATING FOR PLASTIC LENSES

T J Wydeven and R M Kubacki (Bell and Howell Co)

Mar 1977

ARC-10983

Vol 1, No 4, p 645

Low-temperature plasma polymerized coating improves light transmission through plastic lenses.

B76-10592

MIXING INGREDIENTS IN FOAM DISPENSER

W G Simpson

Mar 1977

M-FS-20607

Vol 1, No 4, p 646

Mixing insert built into nozzle blends fluids so that nozzle sprays homogeneous mixture. Simple construction of dispenser makes cleanup easy.

B76-10593

ALUMINUM TRANSFER METHOD FOR PLATING PLASTICS

W D Goodrich and C J Stalmach Jr (LTV Aerospace Corp)

Mar 1977. See also B76-10556, NASA-CR-144364 (75-29356)

MSC-16221

Vol 1, No 4, p 646

Electroless plating technique produces plate of uniform thickness. Hardness and abrasion resistance can be increased

further by heat treatment. Method results in seamless coating over many materials, has low thermal conductivity, and is relatively inexpensive compared to conventional methods.

B76-10594

ELIMINATION OF THERMALLY GENERATED EMF'S ON PC BOARDS

R G Holden (Singer Co) and M T Smid (Singer Co)

Mar 1977

MSC-16125

Vol 1, No 4, p 647

Dissimilar-metal contacts are placed on temperature-controlled substrate.

B76-10595

PREFABRICATED STRAIN-GAGE CONNECTORS

A W Baker (Rockwell Intern Corp)

Mar 1977

MSC-19522

Vol 1, No 4, p 648

Terminals incorporating copper loops reduce on-site installation time for instrumentation.

B76-10596

FABRICATION OF ULTRA-LOW-NOISE AMPLIFIER

E Kraemer (Cutler-Hammer Inc) and J Leeper (Cutler-Hammer, Inc)

Mar 1977

GSFC-12186

Vol 1, No 4, p 648

Three construction techniques reduce noise temperature of microwave parametric amplifier. Techniques include electroformed idler cavity, screw-tuned idler, and low-loss matching section.

09 MATHEMATICS AND INFORMATION SCIENCES

B76-10133

ESTIMATION OF SPARES

M A Mezzacappa (Rockwell Intern Corp)

Mar 1976

MSC-19469

Vol 1, No 1, p 135

Simplified technique to determine the number of spare parts required for a given risk level employs short-cut approximations in lieu of computer-assisted or complex computational analyses.

B76-10134

LINEAR STOCHASTIC OPTIMAL CONTROL AND ESTIMATION

L C Geyser and F K B Lehtinen

Mar 1976

LEWIS-12505

Vol 1, No 1, p 135

Digital program has been written to solve the LSOCE problem by using a time-domain formulation. LSOCE problem is defined as that of designing controls for linear time-invariant system which is disturbed by white noise in such a way as to minimize quadratic performance index.

B76-10135

GUIDE FOR TESTING NUMERICAL-INTEGRATION SUBROUTINES

F T Krogh

Mar 1976

NPO-11644

Vol 1, No 1, p 136

Numerical technique has been developed for testing algorithms used to solve differential equations.

B76-10136

BUSINESS CAPABILITIES FILE

W H Anderson and D A Costanza (Informatics, Inc)

Mar 1976

NPO-13834

Vol 1, No 1, p 136

Automated search system identifies businesses by their functional capabilities and geographic location. File is easy to maintain and update.

B76-10285**RELATIVE HUMIDITY FROM PSYCHROMETRIC DATA**

T W Putnam

Aug 1976

FRC-10108

Vol 1, No 2, p 295

Analytical equation for computing relative humidity as function of wet bulb temperature, dry bulb temperature and atmospheric pressure is suitable for use with calculator or computer. Analytical expressions may be useful for chemical process control systems and building environmental control systems

B76-10286**BIT-ERROR RATES IN OPTICAL COMMUNICATIONS**

W E Webb (Alabama Univ)

Aug 1976

M-FS-23340

Vol 1, No 2, p 296

Statistical model, which consists of on/off binary system assumes Poisson detection process and log-normal atmospheric scintillation. Based upon detection process and atmospheric ionization, piecewise linear model for adaptive threshold system is developed

B76-10287**LEARNING/COST-IMPROVEMENT CURVES**

L M Delonback

Aug 1976

M-FS-23429

Vol 1, No 2, p 296

Review guide is an aid to manager or engineer who must determine production costs for components, systems or services. Methods are described by which manufacturers may use historical data, task characteristics and current cost data to estimate unit prices as function of number of units to be produced

B76-10288**MULTIVARIATE NORMAL INTEGRATION**

L W Falls and M C Carter (Appalachian State Univ)

Aug 1976

M-FS-22867

Vol 1, No 2, p 297

Monte Carlo program evaluates integrals over rectangular regions for dimensions less than six and over elliptical regions in bivariate case. Program gives positive definite symmetric variance/covariance matrix factorization and calculates reciprocal of lower triangular matrix and product of diagonal elements of triangular matrix

B76-10289**DORCA II DYNAMIC OPERATIONS REQUIREMENTS AND COST ANALYSIS PROGRAM**

Innovator not given (Aerospace Corp) Aug 1976

HQN-10834

Vol 1, No 2, p 297

Program is written to handle logistics of acquisition and transport of personnel, equipment and services and to determine costs, transport schedules, acquisition schedules, and fuel requirements of cargo transport

B76-10434**CURVILINEAR BICUBIC-SPLINE-FIT INTERPOLATION**

C H Chi (Perkin-Elmer Corp)

Jan 1977

LANGLEY-11391

Vol 1, No 3, p 467

Modified technique is suited to circular systems represented by polar grid patterns

B76-10435**INTERLEAVED CYCLIC CODES**

R W Hockenberger (IBM)

Jan 1977

KSC-11040

Vol 1, No 3, p 468

Analytical approach for development burst error correction and detection cyclic codes does not require shortening techniques

B76-10436**CONTOURING RANDOMLY SPACED DATA**

J F Kibler, W D Morris, and R W Hamm (Computer Sci Corp)

Jan 1977

LANGLEY-12044

Vol 1, No 3, p 469

Computer program using triangulation contouring technique contours data points too numerous to fit into rectangular grid. Using random access procedures, program can handle up to 56,000 data points and provides up to 20 contour intervals for multiple number of parameters

B76-10437**META-ASSEMBLER**

B C Hodges (McDonnell-Douglas Corp) and A J Edwards

Jan 1977

M-FS-23449

Vol 1, No 3, p 469

Machine-independent cross-assembler program can produce object modules for variety of computers. Program is capable of being reconfigured by data set supplied at assembly time

B76-10438**PROCESSING EQUATIONS FOR STATE-SPACE MODELS**

R C Seidel

Jan 1977

LEWIS-12555

Vol 1, No 3, p 469

Three computer programs comprising six subroutines are used to calculate matrix stability and frequency response

B76-10597**DOCUMENT RESTORATION BY COMPUTER TECHNIQUES**

L Mogavero, W Spuck (Caltech), and I M Levitt (Office of the Mayor Philadelphia Pa)

Mar 1977

HQN-10910

Vol 1, No 4, p 651

Technique utilizes automated electronic data-processing machine to successfully recover illegible information from faded or age distorted documents. Once recovered information can be displayed on cathode-ray-tube screen or reproduced in any desired size

B76-10598**SAFETY ORGANIZATIONS AND EXPERTS**

G Mandel, R I Rubinstein (Franklin Inst), J J Pinto (Franklin Inst), and S Z Meschkow (Franklin Inst)

Mar 1977. See also B74-10019, NASA-CR-121206 (N74-10887), NASA-CR-134929 (N76-25153)

LEWIS-12742

Vol 1, No 4, p 652

Handbook lists organizations and experts in specific, well defined areas of safety technology. Special emphasis is given to relevant safety information sources on aircraft fire hazards and aircraft interior flammability

B76-10599**LIBRARY INFORMATION RETRIEVAL SYSTEM**

I Y Chan

Mar 1977

NPO-14017

Vol 1, No 4, p 653

Program provides information retrieval by one or more of following data elements: subject, title, authors/editors, source, contract number and report number

B76-10600**CAMSP CLASSIFICATION AND MENSURATION SOFTWARE PACKAGE**

Innovator not given (IBM Federal Systems Div) Mar 1977

MSC-14979

Vol 1, No 4, p 653

Batch/interactive system can be used to analyze any remotely sensed Earth resources data. Configuration requirements are 300K bytes of main storage, 200K bytes of storage for IMS, 600K bytes of storage for LCS, five 2314 disk drives, seven 9-track tape drives, and one cluster of digital television equipment

B76-10601**OBLIQUE ORTHOGRAPHIC PROJECTIONS AND CONTOUR PLOTS**

G L Giles

Mar 1977

LANGLEY-11877

Vol 1, No 4, p 654

Oblique orthographic projections allow model to be viewed in any selected orientation specified by Euler-angle transformation. This transformation resolves coordinate system of model to principal plane on which display is to be plotted

09 MATHEMATICS AND INFORMATION SCIENCES

B76-10602

DATA-MANAGEMENT AND INFORMATION SYSTEM

J J Long J N Hatfield M R Diethelm, and G Masters
Mar 1977

NPO-13716

Vol 1, No 4, p 654

User command language consists of unabbreviated English words. System allows user to create, delete, sort, merge, update, punch or transfer all or portion of any file in system without programmer assistance.

B76-10603

CODE-USAGE ANALYSIS SYSTEM

M A Goodwin (Lockheed Electronics Co) and P H Horsley (Lockheed Electronics Co)

Mar 1977

MSC-16214

Vol 1, No 4, p 655

Set of computer programs helps in interpretation of execution characteristics of application programs and applies software technology to questions concerning software performance and quality.

B76-10604

FORTRAN CODE-EVALUATION SYSTEM

J D Capps and R Kleir

Mar 1977

M-FS-23539

Vol 1, No 4, p 655

Automated code evaluation system can be used to detect coding errors and unsound coding practices in any ANSI FORTRAN IV source code before they can cause execution-time malfunctions. System concentrates on acceptable FORTRAN code features which are likely to produce undesirable results.

B76-10605

TRANSFER-FUNCTION PARAMETERS

R C Seidel

Mar 1977

LEWIS-12612

Vol 1, No 4, p 656

Computer program fits linear-factored form transfer function to given frequency-response data. Program is based on conjugate-gradient search procedure that minimizes error between given frequency-response data and frequency response of transfer function that is supplied by user.

B76-10606

INFORMATION RETRIEVAL AND DISPLAY SYSTEM

J L Groover (Computer Sci Corp) and W L King (Computer Sci Corp)

Mar 1977

M-FS-23510

Vol 1, No 4, p 657

Versatile command-driven data management system offers users through simplified command language a means of storing and searching data files, sorting data files into specified orders, performing simple or complex computations, effecting file updates, and printing or displaying output data. Commands are simple to use and flexible enough to meet most data management requirements.

B76-10607

LINEAR STOCHASTIC OPTIMAL CONTROL AND ESTIMATION

L C Geyser and F K B Lehtinen

Mar 1977

LEWIS-12540, LEWIS-12505

Vol 1, No 4, p 657

Problem is defined as that of designing controls for linear time invariant system which is disturbed by white noise, in such a way as to minimize quadratic performance index.

B76-10608

INTEGRAL-MATRIX PROCEDURE FOR BOUNDARY-LAYER PROBLEMS

K W Gross and R M Evans (Acurex Corp)

Mar 1977

M-FS-23348

Vol 1, No 4, p 657

Program BLIMP provides fast, highly accurate solution to general class of gas-phase boundary layer flow problems encompassing broad range of boundary conditions. Program is

capable of obtaining accurate and economical solutions to governing differential equations of momentum, energy, and species.

B76-10609

SYSTEMS IMPROVED NUMERICAL DIFFERENCING ANALYZER

L C Fink (TRW Inc)

Mar 1977 See also B72-10721 B72-10736

MSC-13805

Vol 1, No 4, p 658

Analyzer is software system that possesses capabilities which make it well suited for solving lumped-parameter representations of physical problems governed by diffusion-type equations, such as Fourier, Poisson, or Laplace.

B76-10610

INPUT/OUTPUT ERROR ANALYZER

E T Vaughan

Mar 1977

GSFC-12132

Vol 1, No 4, p 659

Program aids in equipment assessment. Independent assembly-language utility program is designed to operate under level 27 or 31 of EXEC 8 Operating System. It scans user-selected portions of system log file, whether located on tape or mass storage, and searches for and processes 1/O error (type 6) entries.

SUBJECT INDEX

Subject Index

The title of each Tech Brief is listed under several selected subject headings to provide the user with a variety of approaches in his search for specific information. The Tech Brief number e.g. B76-10511, is located under and to the right of the title and is followed by a two-digit number e.g. 03, which designates the subject category in which the entire entry can be found.

A

ABERRATION

Analysis of laser heterodyne communications
GSFC-12098 B76-10511 03

ABORT APPARATUS

Fail-safe hydraulic shaker protection
NPO-13726 B76-10218 06

ABRASION RESISTANCE

Abrasion-resistant coatings for plastic surfaces
ARC-10915 B76-10201 04

ABSORBERS

Integral fan/water separator
MSC-14756 B76-10119 07

ABSORBERS (MATERIALS)

Solar selective surfaces
LEWIS-12614 B76-10047 03

ABSORPTIVITY

Thermal network modeling handbook
MSC-14964 B76-10236 06
Differential-optoacoustic absorption detector
NPO-13759 B76-10494 03

ACCELERATED LIFE TESTS

Testing flat-conductor cable
M-FS-23174 B76-10151 01
Chemiluminescent prediction of service life
MSC-16010 B76-10191 04

ACCELERATION (PHYSICS)

Accelerator for biomedical studies
ARC-10898 B76-10367 05

ACCELERATION PROTECTION

Peak-acceleration limiter
NPO-11940 B76-10082 06
Fail-safe hydraulic shaker protection
NPO-13726 B76-10218 06

ACCIDENT PREVENTION

Compressed air cylinder pallet
MSC-19217 B76-10203 04

Inexpensive low-voltage solid-state alarm
LEWIS-12544 B76-10320 02
Safety organizations and experts
LEWIS-12742 B76-10598 09

ACCUMULATORS

Solar concentrator/absorber
M-FS-23428 B76-10253 07

ACOUSTIC ATTENUATION

Attenuation of sound in ducts with acoustic treatment
LEWIS-12686 B76-10226 06
Noise suppressor for turbofan-jet engines
ARC-10812 B76-10375 06

ACOUSTIC DUCTS

Attenuation of sound in ducts with acoustic treatment
LEWIS-12686 B76-10226 06
Impedance of curved ducts
LEWIS-12636 B76-10237 06

ACOUSTIC IMPEDANCE

Impedance of curved ducts
LEWIS-12636 B76-10237 06

ACOUSTIC MEASUREMENTS

Measuring trace dispersants in gas streams
ARC-10896 B76-10374 06
Acoustic testing of materials
LANGLEY-11659 B76-10550 06

ACOUSTIC PROPAGATION

ROUS bolt-tensioning monitor
LANGLEY-12016 B76-10216 06
Measuring trace dispersants in gas streams
ARC-10896 B76-10374 06
Acoustic testing of materials
LANGLEY-11659 B76-10550 06

ACOUSTIC PROPERTIES

Improved gas-pressure transducer
ARC-10639 B76-10381 06

ACOUSTICS

Reduction of acoustic losses by outgassing
MSC-15985 B76-10069 04

ACOUSTO-OPTICS

Tunable acoustical optical filter
NPO-13640 B76-10340 03
Differential-optoacoustic absorption detector
NPO-13759 B76-10494 03

ADAPTERS

Connector contact-ring bus
MSC-19480 B76-10146 01

ADENOSINE TRIPHOSPHATE

Fast measurement of bacterial susceptibility to antibiotics
GSFC-10246 B76-10536 05

ADHESIVE BONDING

Polymer adhesives for hybrid circuits
M-FS-23287 B76-10015 01
Improved bonding of honeycomb panels
MSC-19560 B76-10428 08

Hot-wire tile removal tool
KSC-11043 B76-10433 08
Transducer bonding kit
MSC-19690 B76-10587 08

ADHESIVES

Organic adhesives for hybrid microcircuits
M-FS-23370 B76-10014 01
Polymer adhesives for hybrid circuits
M-FS-23287 B76-10015 01
Graphite-reinforced bone cement
NPO-13764 B76-10211 05
3-D foam adhesive deposition
M-FS-22739 B76-10271 08

ADJUSTING

Uniform solar cells
GSFC-11941 B76-10125 08

AERIAL PHOTOGRAPHY

Frame for daylight photocopying
KSC-11026 B76-10406 07
Digital image-rectification system
GSFC-12156 B76-10513 03

AERIAL RUDDERS

Spin-rate control device
ARC-10884 B76-10417 07

AERODYNAMIC CHARACTERISTICS

Wingtip smoke generator
ARC-10905 B76-10373 06
Swept wing aerodynamics
ARC-10790 B76-10403 06
Stability of an elastic airplane
ARC-11086 B76-10568 06

AERODYNAMIC COEFFICIENTS

Time-domain aircraft model
MSC-16018 B76-10391 06
Determining aircraft stability and control derivatives
FRC-10109 B76-10402 06

AERODYNAMIC FORCES

Estimating subsonic aerodynamic characteristics of complex planforms
LANGLEY-11047 B76-10565 06

AERODYNAMIC HEATING

MINIVER Miniature version of real/ideal gas aero-heating and ablation computer program
M-FS-21951 B76-10105 06
Tangent-ogive nose cones
GSFC-11468 B76-10107 06

AERODYNAMIC NOISE

Noise suppressor for turbofan-jet engines
ARC-10812 B76-10375 06

AERODYNAMIC STABILITY

WING Calculating lightning-induced voltages in electrical circuits within an aircraft wing
LEWIS-12108 B76-10351 03
Spin-rate control device
ARC-10884 B76-10417 07

AERODYNAMICS

Swept-tapered-wing aerodynamics
LANGLEY-11701 B76-10112 06
Estimating aircraft states
ARC-10969 B76-10567 06

AEROELASTICITY

Time-domain aircraft model

MSC-16018 B76-10391 06

AEROSOLS

Standard aerosols for particle velocimeters

M-FS-23075 B76-10050 03

Airport laser-Doppler

M-FS-23423 B76-10174 03

Portable solar radiometer measures stack-plume effluents

LANGLEY-12123 B76-10491 03

AGING (MATERIALS)

Age-forming aluminum panels

MSC-12648 B76-10281 08

AIR CONDITIONING

Solar heating and cooling performance

M-FS-23432 B76-10235 06

AIR CONDITIONING EQUIPMENT

SESOP Program for solar-energy heating-systems analysis

MSC-14853 B76-10113 06

Solar heated and cooled office building

LEWIS-12512 B76-10395 06

AIR INTAKES

Conical diffuser for fuel cells

MSC-14026 B76-10255 07

AIR POLLUTION

Atmospheric particle sampler

NPO-13396 B76-10059 04

Continuous HCl in air indicator

NPO-13474 B76-10060 04

Hydrogen chloride test set

M-FS-23357 B76-10063 04

Miniature carbon dioxide sensor

MSC-16009 B76-10344 03

Portable wind sensitive, directional air sampler

LEWIS-12743 B76-10489 03

Differential-optoacoustic absorption detector

NPO-13759 B76-10494 03

AIR SAMPLING

Separation of water from air samples

ARC-10890 B76-10205 04

Low-pressure-gas sampling pump

ARC-10941 B76-10573 07

AIR TRAFFIC CONTROL

Low-cost pressure-data encoder

NPO-13692 B76-10303 01

AIRCRAFT ANTENNAS

Low-cost dual-frequency microwave antenna

MSC-16100 B76-10462 01

Multifrequency broadband

dual-polarized antenna

NPO-13866 B76-10464 01

AIRCRAFT BRAKES

Powered wheel for aircraft

LANGLEY-12053 B76-10411 07

AIRCRAFT COMPARTMENTS

Experimental data for new fire-retardant materials

MSC-16022 B76-10361 04

AIRCRAFT CONFIGURATIONS

Math model of 3-D aircraft

configuration

LANGLEY-12029 B76-10400 06

AIRCRAFT CONTROL

Determining aircraft stability and control derivatives

FRC-10109 B76-10402 06

AIRCRAFT DESIGN

Trimmed noncoplanar planforms with

minimum vortex drag

LANGLEY-12121 B76-10566 06

AIRCRAFT ENGINES

Thermal fatigue-and-oxidation-resistant

alloy

LEWIS-12564 B76-10061 04

AIRCRAFT EQUIPMENT

Multiplane binocular visual display system

ARC-10808 B76-10168 02

AIRCRAFT INSTRUMENTS

All-nickel hot-wire probe

ARC-10911 B76-10379 06

Solid-state turn-coordinator display

LANGLEY-12090 B76-10451 01

Full-color hybrid display

ARC-10903 B76-10477 02

AIRCRAFT LANDING

Air-cushion landing systems

LANGLEY-11783 B76-10397 06

AIRCRAFT MAINTENANCE

Jet engine stator-blade removal tool

MSC-16000 B76-10420 07

AIRCRAFT MODELS

Time-domain aircraft model

MSC-16018 B76-10391 06

AIRCRAFT SAFETY

Crosswind landing-gear position indicator

LANGLEY-11941 B76-10120 07

Airport laser-Doppler

M-FS-23423 B76-10174 03

AIRCRAFT STABILITY

BUCLAP2

LANGLEY-11696 B76-10111 06

Determining aircraft stability and control derivatives

FRC-10109 B76-10402 06

AIRCRAFT STRUCTURES

WING Calculating lightning-induced voltages in electrical circuits within an

aircraft wing

LEWIS-12108 B76-10351 03

Stability of an elastic airplane

ARC-11086 B76-10568 06

AIRCRAFT WAKES

Laser-Doppler measurement of air turbulence

M-FS-23155 B76-10031 03

Airport laser-Doppler

M-FS-23423 B76-10174 03

AIRFIELD SURFACE MOVEMENTS

Air-cushion landing systems

LANGLEY-11783 B76-10397 06

AIRFRAMES

SPAR Structural-performance analysis and redesign

LANGLEY-12062 B76-10399 06

ALDEHYDES

Catalysts for low-energy aldehyde processes

NPO-13827 B76-10519 04

ALGORITHMS

COMOC a finite-element algorithm for the Navier-Stokes equations

LANGLEY-11480 B76-10241 06

Control system design

LEWIS-12556 B76-10404 06

Processing equations for state-space models

LEWIS-12555 B76-10438 09

Analog-to-digital conversion for radix

(-2)

NPO-13093 B76-10465 01

Systems improved numerical differencing analyzer

MSC-13805 B76-10609 09

ALIGNMENT

Mechanical positioner

MSC-15817 B76-10245 07

Paddle-pin alinement test

KSC-10740 B76-10388 06

ALKYLATION

Novel aminobenzyl and imidobenzyl benzenes

LANGLEY-11843 B76-10058 04

ALL-WEATHER AIR NAVIGATION

Wind velocity measurement

M-FS-23362 B76-10172 03

ALLOYS

Comparative thermal fatigue resistance

LEWIS-12563 B76-10062 04

Large-diameter fasteners of CRES alloy

MSC-19313 B76-10250 07

Annealing strained alloy 718

M-FS-19242 B76-10284 08

Determining eutectic composition in metal alloys

LEWIS-12633 B76-10520 04

Stress-corrosion cracking due to hydrazine

ARC-11093 B76-10526 04

ALTERNATING CURRENT

Free-space microwave-power transmission

M-FS-23443 B76-10162 02

ALUMINUM

Combined joining process for dissimilar metals A concept

MSC-19323 B76-10127 08

Diffusion brazing nickel-plated stainless steel

MSC-19322 B76-10265 08

Forming hard aluminum in complex shapes

MSC-19693 B76-10579 08

ALUMINUM ALLOYS

Age-forming aluminum panels

MSC-12648 B76-10281 08

ALUMINUM COATINGS

Thermal fatigue-and-oxidation-resistant alloy

LEWIS-12564 B76-10061 04

AMINES

Hydrogen chloride test set

M-FS-23357 B76-10063 04

Second-generation PMR polyimides

LEWIS-12738 B76-10359 04

AMMONIUM COMPOUNDS

Extracting lignins from mill wastes

NPO-13847 B76-10514 04

Extraction of urea and ammonium ion

ARC-11064 B76-10515 04

AMPLIFIER DESIGN

Wideband distribution amplifier

NPO-13256 B76-10307 01

UHF/microwave oscillator/amplifier

GSFC-12113 B76-10455 01

AMPLIFIERS

Deflection amplifier for image dissectors

NPO-13079 B76-10449 01

Thick-film preamplifier

NPO-13416 B76-10459 01

AMPOULES

Leak testing glass ampoules

LANGLEY-11988 B76-10551 06

ANALOG CIRCUITS

Modular design of high frequency circuits

M-FS-23408 B76-10139 01

ANALOG DATA

Modular design of high frequency circuits
M-FS-23408 B76-10139 01

ANALOG TO DIGITAL CONVERTERS

A/D converter
LANGLEY-11319 B76-10009 01
Control logic for successive-approximation A/D converters
NPO-11937 B76-10010 01
Data-storage compression scheme
NPO-13488 B76-10017 02
Serial-to-parallel color-TV converter
MSC-14844 B76-10027 02
Subcarrier signal combiner for arrayed antennas
NPO-13723 B76-10329 02
Capacitive shaft-angle encoder
ARC-10897 B76-10386 06
Analog-to-digital conversion for radix (-2)
NPO-13093 B76-10465 01

ANALYSIS (MATHEMATICS)

Analytic numerical solutions for shock waves
ARC-10959 B76-10096 06
Transient thermal analysis of fluid systems
MSC-19502 B76-10401 06
Systems improved numerical differencing analyzer
MSC-13805 B76-10609 09

ANALYTIC GEOMETRY

Math model of 3-D aircraft configuration
LANGLEY-12029 B76-10400 06

ANALYTICAL CHEMISTRY

Hydrogen chloride test set
M-FS-23357 B76-10063 04
Miniature carbon dioxide sensor
MSC-16009 B76-10344 03

ANALYZING

Miniature carbon dioxide sensor
MSC-16009 B76-10344 03

ANCHOIC CHAMBERS

Acoustic testing of materials
LANGLEY-11659 B76-10550 06

ANEMOMETERS

Velocity sensor for slow flows
LANGLEY-11785 B76-10380 06

ANGLES (GEOMETRY)

Radial level
LANGLEY-11982 B76-10246 07

ANGULAR MOMENTUM

Miniature-angular-position transducer
LANGLEY-11999 B76-10555 06

ANGULAR RESOLUTION

Radial level
LANGLEY-11982 B76-10246 07

Miniature-angular-position transducer
LANGLEY-11999 B76-10555 06

ANGULAR VELOCITY

Miniature-angular-position transducer
LANGLEY-11999 B76-10555 06

ANHYDRIDES

Polymeric foams stable at high temperatures
ARC-11008 B76-10065 04

ANISOTROPIC SHELLS

General instability analysis
M-FS-23407 B76-10563 06

ANISOTROPY

Triple-layer bubble-domain film
LANGLEY-11755 B76-10006 01

ANNEALING

Annealing strained alloy 718
M-FS-19242 B76-10284 08

ANOLYTES

REDOX electrochemical energy storage
LEWIS-12220 B76-10070 04

ANTENNA ARRAYS

Active retrodirective antenna
NPO-13641 B76-10463 01

ANTENNA COUPLERS

Diplexer switch
LANGLEY-11546 B76-10448 01

ANTENNA DESIGN

Low-cost dual-frequency microwave antenna
MSC-16100 B76-10462 01
Active retrodirective antenna
NPO-13641 B76-10463 01
Multifrequency broadband dual-polarized antenna
NPO-13866 B76-10464 01
Dielectric covered antennas
MSC-16186 B76-10471 01

ANTENNA RADIATION PATTERNS

Dielectric covered antennas
MSC-16186 B76-10471 01

ANTIREFLECTION COATINGS

Antireflection coating for plastic lenses
ARC-10983 B76-10591 08

APPLICATIONS OF MATHEMATICS

Predicting off-design performance of radial-inflow turbines
LEWIS-12500 B76-10242 06
Relative humidity from psychrometric data
FRC-10108 B76-10285 09
Multivariate normal integration
M-FS-22867 B76-10288 09

APPLICATIONS PROGRAMS (COMPUTERS)

CONVERT Technique and computer program for calculating photographic film-density variations
LANGLEY-11873 B76-10057 03
Proton tissue dose
LANGLEY-11802 B76-10078 05
NASTRAN component-mode synthesis
MSC-19632 B76-10104 06
MINIVER Miniature version of real/ideal gas aero-heating and ablation computer program
M-FS-21951 B76-10105 06
ESOP Version IV Energy systems optimization program
MSC-14854 B76-10106 06
Tangent-ogive nose cones
GSFC-11468 B76-10107 06
DYNGEN
LEWIS-12506 B76-10108 06
Venting for condensation in gas lines
MSC-19621 B76-10109 06
REJECT
LEWIS-12375 B76-10110 06
BUCLAP2
LANGLEY-11696 B76-10111 06
Swept-tapered-wing aerodynamics
LANGLEY-11701 B76-10112 06
SESOP Program for solar-energy heating-systems analysis
MSC-14853 B76-10113 06
Linear stochastic optimal control and estimation
LEWIS-12505 B76-10134 09
Business capabilities file
NPO-13834 B76-10136 09

ARC DISCHARGES

Sustained-arc ignition system
LEWIS-12444 B76-10410 07

ATMOSPHERIC TURBULENCE

ARC WELDING

Polishing gold and gold-alloy crystals
M-FS-22800 B76-10263 08
Synchronized backside-weld follower
M-FS-24454 B76-10272 08

ARCHITECTURE

NASA technology utilization house
LANGLEY-12134 B76-10570 07

ARITHMETIC AND LOGIC UNITS

Signal enhancement filters
MSC-14907 B76-10453 01

AROMATIC COMPOUNDS

Polymeric foams stable at high temperatures
ARC-11008 B76-10065 04

ARRAYS

Combined GaAs laser outputs
M-FS-23397 B76-10173 03
Improved resolution for sensor arrays
NPO-13745 B76-10439 01

ARTIFICIAL SATELLITES

Pointing control/roll positioning mechanism
M-FS-22809 B76-10121 07

ASSAYING

Quantitative bioluminescent detection of bacteria
GSFC-12003 B76-10073 05
Laser particulate spectrometer
MSC-14969 B76-10331 03
Economical measurement of particle concentration
GSFC-12088 B76-10332 03
Determination of trace amounts of POF3
LEWIS-10577 B76-10356 04

ASSEMBLER ROUTINES

Meta-assembler
M-FS-23449 B76-10437 09

ASSEMBLING

Ablative-filled honeycomb composites
LANGLEY-11180 B76-10273 08

ATMOSPHERIC ATTENUATION

Differential-optoacoustic absorption detector
NPO-13759 B76-10494 03

ATMOSPHERIC CHEMISTRY

Hydrogen chloride test set
M-FS-23357 B76-10063 04

ATMOSPHERIC COMPOSITION

Differential-optoacoustic absorption detector
NPO-13759 B76-10494 03

ATMOSPHERIC DENSITY

Atmospheric particle sampler
NPO-13396 B76-10059 04

ATMOSPHERIC ENTRY

Shock-tube driver
NPO-13528 B76-10090 06

ATMOSPHERIC MOISTURE

Relative humidity from psychrometric data
FRC-10108 B76-10285 09
Quartz-crystal-oscillator hygrometer
GSFC-12153 B76-10349 03

ATMOSPHERIC SCATTERING

CONVERT Technique and computer program for calculating photographic film-density variations
LANGLEY-11873 B76-10057 03
Bit-error rates in optical communications
M-FS-23340 B76-10286 09

ATMOSPHERIC TURBULENCE

Laser-Doppler measurement of air turbulence
M-FS-23155 B76-10031 03

ATMOSPHERICS

Simplified deflection-coil linearity testing
 M-FS-23400 876-10180 03
 Bit-error rates in optical communications
 M-FS-23340 876-10286 09

ATTENUATORS

Band-elimination filter
 M-FS-23303 876-10295 01

ATTITUDE CONTROL

Spin-rate control device
 ARC-10884 876-10417 07

AUDIO EQUIPMENT

Nondestructive interior examination of moving parts
 M-FS-23378 876-10545 06

AUDITORY SIGNALS

Inexpensive low-voltage solid-state alarm
 LEWIS-12544 876-10320 02
 Oral annunciator with programmable vocabulary
 MSC-14798 876-10326 02

AUSTENITIC STAINLESS STEELS

Braze/Rebraze process for CRES steel
 MSC-19600 876-10280 08

AUTOMATIC CONTROL

Tracking system for moving subjects
 HQN-10880 876-10028 02
 Crosswind landing-gear position indicator
 LANGLEY-11941 876-10120 07
 Pointing control/roll positioning mechanism
 M-FS-22809 876-10121 07

AUTOMATIC CONTROL VALVES

Constant-rate fluid-delivery system
 MSC-14905 876-10214 06

AUTOMATIC TEST EQUIPMENT

Overhead tray for cable test system
 MSC-19488 876-10270 08

AUTOMATION

Miniature carbon dioxide sensor
 MSC-16009 876-10344 03

AUTOMOBILE ENGINES

Improved automobile gas turbine engine
 LEWIS-12521 876-10115 07

AUTORADIOGRAPHY

Image intensification of developed photographs
 M-FS-23461 876-10495 03

AUXILIARY POWER SOURCES

Hybrid-mode thermionic converter
 HQN-10876 876-10056 03

AXIAL LOADS

Analysis of axisymmetric shell structure
 LANGLEY-12059 876-10398 06

B

BACKGROUND NOISE

Receiver performance evaluator
 NPO-13701 876-10324 02

BACTERIA

Quantitative bioluminescent detection of bacteria
 GSFC-12003 876-10073 05
 Signal processing and display for electrochemical data
 LANGLEY-11922 876-10327 02
 Remote water-monitoring system
 LANGLEY-11973 876-10365 05

BACTERIOLOGY

Quantitative bioluminescent detection of bacteria
 GSFC-12003 876-10073 05
 Fast measurement of bacterial susceptibility to antibiotics
 GSFC-10246 876-10536 05

BALL BEARINGS

Fluid-film bearing damper
 LEWIS-11158 876-10378 06

BALLISTIC TRAJECTORIES

Impact of a solid body with water
 M-FS-23512 876-10560 06

BALLS

Improved cryogenic shaft seals
 M-FS-19153 876-10080 06
 Long-life ball-valve design
 M-FS-19282 876-10576 07

BANDPASS FILTERS

Band-elimination filter
 M-FS-23303 876-10295 01
 Pinhole diffraction filter
 GSFC-12120 876-10333 03
 Charge-sensitive amplifier with notched frequency response
 LANGLEY-11317 876-10440 01

BANDS

Controlled linear clasper/loader
 GSFC-12105 876-10432 08

BARRIER LAYERS

Flexible-pile thermal sealant
 MSC-19568 876-10371 06

BATCH PROCESSING

Meta-assembler
 M-FS-23449 876-10437 09
 CAMSP Classification and Mensuration Software Package
 MSC-14979 876-10600 09

BATTERY CHARGERS

Compact reconditioner for Ni/Cd cells
 M-FS-23270 876-10141 01

BAYES THEOREM

GEODYN Orbital and geodetic parameter estimation
 GSFC-12014 876-10396 06

BCH CODES

Interleaved cyclic codes
 KSC-11040 876-10435 09

BEAM SPLITTERS

Improved interferometer beam splitter
 NPO-11932 876-10041 03
 Beam splitter/combiner
 GSFC-12083 876-10177 03
 Monitor for optical-window contamination
 ARC-10947 876-10345 03

BEAMS (RADIATION)

Beam splitter/combiner
 GSFC-12083 876-10177 03

BEARINGS

Fluid-film bearing damper
 LEWIS-11158 876-10378 06

BELLOWES

Constant-rate fluid-delivery system
 MSC-14905 876-10214 06
 Low-pressure-gas sampling pump
 ARC-10941 876-10573 07

BENDING

Relative stiffness of flat-conductor cable
 M-FS-23537 876-10469 01

BENZENE

Novel aminobenzyl and imidobenzyl benzenes
 LANGLEY-11843 876-10058 04

BERYLLIUM ALLOYS

Elimination of thermally generated EMF's on PC boards
 MSC-16125 876-10594 08

BIAS

Optical bias assembly
 MSC-14412 876-10051 03

BIMETALS

Zero-angle helical coil
 GSFC-10969 876-10085 06

BINARY CODES

Manchester transition tracking loop (MTTL)
 MSC-14842 876-10319 02

BINARY DATA

PN ranging/telemetry transmission
 GSFC-12017 876-10323 02

BINARY MIXTURES

Determining eutectic composition in metal alloys
 LEWIS-12633 876-10520 04

BINARY TO DECIMAL CONVERTERS

Binary/BCD-to-ASCII data converter
 GSFC-12044 876-10322 02

BIOACOUSTICS

Biomedical ultrasonoscope
 ARC-10994 876-10537 05

BIOCHEMISTRY

Fraction collector for electrophoresis
 M-FS-23459 876-10352 04

BIODYNAMICS

Accelerator for biomedical studies
 ARC-10898 876-10367 05

BIOENGINEERING

Occlusive-cuff controller
 MSC-14836 876-10207 05
 Rocking-motion sensor for the blind
 MSC-14805 876-10366 05

BIOINSTRUMENTATION

Myocardial wall-thickness transducer
 NPO-13644 876-10075 05
 Occlusive-cuff controller
 MSC-14836 876-10207 05
 Hybrid thin-film amplifier
 MSC-13975 876-10314 01
 Short-range biotelemetry system
 MSC-16011 876-10369 05

BIOLUMINESCENCE

Quantitative bioluminescent detection of bacteria
 GSFC-12003 876-10073 05

BIOMEDICAL DATA

Proton tissue dose
 LANGLEY-11802 876-10078 05
 Occlusive-cuff controller
 MSC-14836 876-10207 05

BIOMETRICS

Fraction collector for electrophoresis
 M-FS-23459 876-10352 04
 Automated EEG acquisition
 MSC-16111 876-10364 05
 Accelerator for biomedical studies
 ARC-10898 876-10367 05
 Biomedical ultrasonoscope
 ARC-10994 876-10537 05

BIOPAKS

Aseptic fluid-transfer system
 NPO-13743 876-10210 05

BIOPHYSICS

Occlusive-cuff controller
 MSC-14836 876-10207 05

BIOTELEMETRY

Occlusive-cuff controller
 MSC-14836 876-10207 05
 Automated EEG acquisition
 MSC-16111 876-10364 05

- In vivo bone-strain telemetry
ARC-11074 B76-10535 05
- BIREFRINGENCE**
Two-wavelength dye laser
LANGLEY-12012 B76-10170 03
- BISMUTH COMPOUNDS**
Nucleation of electronic-crystal regions
B76-10524 04
- BISTABLE CIRCUITS**
Control logic for
successive-approximation A/D converters
NPO-11937 B76-10010 01
- BIT SYNCHRONIZATION**
Long binary frame sync words
NPO-13727 B76-10163 02
Manchester transition tracking loop
(MTTL)
MSC-14842 B76-10319 02
- BIVARIATE ANALYSIS**
Multivariate normal integration
M-FS-22867 B76-10288 09
- BLADES (CUTTERS)**
Hot-wire tile removal tool
KSC-11043 B76-10433 08
- BLINDNESS**
Rocking-motion sensor for the blind
MSC-14805 B76-10366 05
- BLOOD**
Aseptic fluid-transfer system
NPO-13743 B76-10210 05
- BLOOD CIRCULATION**
Occlusive-cuff controller
MSC-14836 B76-10207 05
- BLOOD VESSELS**
Occlusive-cuff controller
MSC-14836 B76-10207 05
- BODY FLUIDS**
Aseptic fluid-transfer system
NPO-13743 B76-10210 05
Fast measurement of bacterial
susceptibility to antibiotics
GSFC-10246 B76-10536 05
- BODY MEASUREMENT (BIOLOGY)**
Occlusive-cuff controller
MSC-14836 B76-10207 05
- BOILING**
Liquid-retention canopy
M-FS-24133 B76-10092 06
- BOLTS**
ROUS bolt-tensioning monitor
LANGLEY-12016 B76-10216 06
Large-diameter fasteners of CRES alloy
MSC-19313 B76-10250 07
High-torque open-end wrench
NPO-13541 B76-10405 07
Slotted bolts and studs for vacuum
systems
LEWIS-10391 B76-10407 07
Soft seat A-N fitting for vacuum use
LEWIS-10130 B76-10408 07
Dynamic load attenuator
MSC-17472 B76-10416 07
- BONDING**
Organic adhesives for hybrid
microcircuits
M-FS-23370 B76-10014 01
Reliability of hybrid microcircuit
bonding
M-FS-23358 B76-10129 08
Transistor-to-substrate bond quality
M-FS-21931 B76-10137 01
Solar cell electrical connections
LEWIS-12293 B76-10260 08
3-D foam adhesive deposition
M-FS-22739 B76-10271 08
Improved bonding of honeycomb panels
MSC-19560 B76-10428 08
- Transducer bonding kit
MSC-19690 B76-10587 08
- BONES**
Graphite-reinforced bone cement
NPO-13764 B76-10211 05
In vivo bone-strain telemetry
ARC-11074 B76-10535 05
- BOROSILICATE GLASS**
Borosilicate glass-to-Kovar tube
bonding
GSFC-12077 B76-10278 08
Fuel-cell powerplant insulation
MSC-16012 B76-10426 08
- BOTTLES**
Cleaning large tanks and gas bottles
MSC-14966 B76-10430 09
- BOUNDARY LAYER FLOW**
Outer flow and turbulence in boundary
layers
M-FS-23286 B76-10100 06
Hot-wire probe
ARC-10900 B76-10222 06
Swept wing aerodynamics
ARC-10790 B76-10403 06
- BOUNDARY LUBRICATION**
Fundamentals of fluid sealing
LEWIS-12683 B76-10392 06
- BOUNDARY VALUE PROBLEMS**
COMOC a finite-element algorithm for
the Navier-Stokes equations
LANGLEY-11480 B76-10241 06
- BOW WAVES**
Shock interference patterns and heating
LANGLEY-11497 B76-10240 06
- BRAGG ANGLE**
Shadow mask for X-ray spectrometer
GSFC-12131 B76-10348 03
- BRAKES (FOR ARRESTING MOTION)**
Safety brake for tape reels
GSFC-11960 B76-10412 07
- BRANCHING (MATHEMATICS)**
Active retrodirective antenna
NPO-13641 B76-10463 01
- BRAZING**
Combined joining process for dissimilar
metals A concept
MSC-19323 B76-10127 08
Tool removes brazed fittings
LANGLEY-10944 B76-10244 07
Diffusion brazing nickel-plated stainless
steel
MSC-19322 B76-10265 08
Repair of fused silica platens
MSC-19713 B76-10276 08
Technique for joining metal tubing
ARC-10946 B76-10279 08
Brazing/Rebrazing process for CRES steel
MSC-19600 B76-10280 08
Precision centering vise
KSC-11041 B76-10409 07
- BREADBOARD MODELS**
Modular design of high frequency
circuits
M-FS-23408 B76-10139 01
- BREATHING APPARATUS**
Firefighter's breathing system
MSC-14733 B76-10208 05
Miniature emergency oxygen unit
KSC-11011 B76-10539 05
- BRIDGMAN METHOD**
Growing crystals from eutectic melts
M-FS-22926 B76-10202 04
- BRIGHTNESS**
Fluorescent dimming ballast
MSC-14937 B76-10292 01
Solid-state turn-coordinator display
LANGLEY-12090 B76-10451 01
- BRIGHTNESS DISCRIMINATION**
Analog-to-binary conversion of video
data
GSFC-11918 B76-10165 02
- BROADBAND AMPLIFIERS**
Charge-sensitive amplifier with notched
frequency response
LANGLEY-11317 B76-10440 01
- BUBBLE TECHNIQUE**
Triple-layer bubble-domain film
LANGLEY-11755 B76-10006 01
A passive chevron replicator
LANGLEY-11906 B76-10441 01
New passive replicator for bubble domain
devices
LANGLEY-11997 B76-10442 01
Continuous-data FIFO bubble shift
register
LANGLEY-11862 B76-10443 01
Multiple-bubble detector
LANGLEY-12043 B76-10444 01
- BUCKLING**
BUCLAP2
LANGLEY-11696 B76-10111 06
Analysis of axisymmetric shell structure
LANGLEY-12059 B76-10398 06
SPAR Structural-performance analysis
and redesign
LANGLEY-12062 B76-10399 06
Energy-absorbing attenuator
MSC-17473 B76-10419 07
- BUFFER STORAGE**
Fraction-storage unit for
drug-identification system
NPO-13111 B76-10200 04
- BUILDINGS**
NECAP NASA Energy-cost analysis
program
LANGLEY-11888 B76-10239 06
- BUNDLES**
Electrical-cable design guide
M-FS-24280 B76-10157 01
- BUNKERS (FUEL)**
Cryogenic storage tank thermal analysis
MSC-19103 B76-10234 06
- BURGER EQUATION**
Analytic numerical solutions for shock
waves
ARC-10959 B76-10096 06
- BURNS (INJURIES)**
Multispectral imaging for medical
diagnosis
NPO-13922 B76-10540 05
- BUS CONDUCTORS**
Connector contact-ring bus
MSC-19480 B76-10146 01
- BUTT JOINTS**
Compound solder joints
LANGLEY-11444 B76-10274 08

C

- C BAND**
Low-cost dual-frequency microwave
antenna
MSC-16100 B76-10462 01
- CABLES (ROPES)**
Cable-load equalization system
MSC-17494 B76-10230 06
- CALIBRATING**
Pulse amplitude discriminator threshold
calibration
GSFC-11912 B76-10023 02

Calibration source for sensitive optical detectors
 LANGLEY-11625 B76-10036 03
 Calibration of image dissector tubes
 M-FS-22208 B76-10055 03
 Cyclical bidirectional rotary actuator
 GSFC-11883 B76-10117 07
 Self-calibrating radiometer
 ARC-10811 B76-10339 03
 Terrestrial photovoltaic measurements workshop
 LEWIS-12643 B76-10350 03
CALORIC REQUIREMENTS
 Meal system for the elderly
 MSC-16062 B76-10530 05
CAMERA SHUTTERS
 DC drive system for cine/pulse cameras
 MSC-16085 B76-10497 03
CAMERA TUBES
 Magnifying image intensifier
 GSFC-12010 B76-10506 03
CAMERAS
 Optics and lasers
 HQN-10893 B76-10187 03
 Optical devices
 HQN-10891 B76-10188 03
 DC drive system for cine/pulse cameras
 MSC-16085 B76-10497 03
CANCER
 Liquid-cooled bra for cancer detection
 ARC-11007 B76-10533 05
CANOPIES
 Liquid-retention canopy
 M-FS-24133 B76-10092 06
CANTILEVER MEMBERS
 Exercise support for therapy
 LANGLEY-11975 B76-10074 05
CAPACITANCE SWITCHES
 Capacitive shaft-angle encoder
 ARC-10897 B76-10386 06
CAPACITORS
 Improved wet-slug capacitor
 LANGLEY-11720 B76-10008 01
 Reliability of hybrid microcircuit bonding
 M-FS-23358 B76-10129 08
 All-tantalum electrolytic capacitor
 M-FS-23462 B76-10424 08
CARBON
 Less-costly activated carbon for sewage treatment
 NPO-13877 B76-10516 04
CARBON COMPOUNDS
 Cost saving synergistic shaft seal
 LEWIS-12119 B76-10081 06
 Coating for solar panels
 M-FS-23420 B76-10196 04
CARBON DIOXIDE
 Miniature carbon dioxide sensor
 MSC-16009 B76-10344 03
CARBON DIOXIDE CONCENTRATION
 Determining total carbon in hydrazine
 KSC-11022 B76-10521 04
CARBON FIBER REINFORCED PLASTICS
 Graphite-reinforced bone cement
 NPO-13764 B76-10211 05
CARBON STEELS
 Cleaning carbon steel
 KSC-10689 B76-10275 08
CARDIOGRAMS
 Biomedical ultrasonoscope
 ARC-10994 B76-10537 05

CARRIAGES
 Rigid cable support for blind installations
 MSC-19473 B76-10585 08
CARRIER WAVES
 Subcarrier signal combiner for arrayed antennas
 NPO-13723 B76-10329 02
CAST ALLOYS
 Determining eutectic composition in metal alloys
 LEWIS-12633 B76-10520 04
CATALYSTS
 Catalysts for low-energy aldehyde processes
 NPO-13827 B76-10519 04
CATALYTIC ACTIVITY
 Catalytic oxidation of waste materials
 MSC-14831 B76-10354 04
CATHODES
 Ultra-high-vacuum electrical feedthrough
 HQN-10799 B76-10005 01
CATHOLYTES
 REDOX - electrochemical energy storage
 LEWIS-12220 B76-10070 04
CAVITATION FLOW
 Cavitating performance of pumping machinery
 LEWIS-12423 B76-10394 06
CAVITY RESONATORS
 Fabrication of ultra-low-noise amplifier
 GSFC-12186 B76-10596 08
CELESTIAL GEODESY
 Geodetic control net
 NPO-13718 B76-10510 03
CEMENTS
 Graphite-reinforced bone cement
 NPO-13764 B76-10211 05
CENTRAL ELECTRONIC MANAGEMENT SYSTEM
 Data-management and information system
 NPO-13716 B76-10602 09
CENTRAL PROCESSING UNITS
 Reduction of computer power interruptions
 MSC-16136 B76-10479 02
CENTRIFUGES
 Fluid classifier and disseminator
 HQN-10748 B76-10089 06
 Integral fan/water separator
 MSC-14756 B76-10119 07
CERAMICS
 Improved high-temperature heater with stabilized-zirconia elements
 M-FS-23351 B76-10221 06
 Enamel for high-temperature superalloys
 M-FS-22804 B76-10358 04
 Fabrication and applications of electrets
 M-FS-23437 B76-10429 08
CERMETS
 Measuring mandibular motions
 ARC-10956 B76-10362 05
CHANNELS (DATA TRANSMISSION)
 Microprogramed telemetry processor
 ARC-11061 B76-10460 01
 Advanced imaging communication system
 NPO-13545 B76-10482 02
CHARGE COUPLED DEVICES
 Improved resolution for sensor arrays
 NPO-13745 B76-10439 01

Electrostatic analysis of charge-coupled structures
 M-FS-23507 B76-10472 01
CHARGE TRANSFER DEVICES
 Electrostatic analysis of charge-coupled structures
 M-FS-23507 B76-10472 01
CHARGED PARTICLES
 Spatial filter for Q-switched laser
 LEWIS-12164 B76-10501 03
CHASSIS
 Improved shelf for electronic modules
 NPO-13158 B76-10578 07
CHEMICAL ANALYSIS
 Quantitative bioluminescent detection of bacteria
 GSFC-12003 B76-10073 05
 Fluid classifier and disseminator
 HQN-10748 B76-10089 06
 Chemiluminescent prediction of service life
 MSC-16010 B76-10191 04
 Automated solvent concentrator
 NPO-13068 B76-10198 04
 Precolumn for extract concentration
 NPO-13083 B76-10199 04
 Fraction-storage unit for drug-identification system
 NPO-13111 B76-10200 04
 Borosilicate glass-to-Kovar tube bonding
 GSFC-12077 B76-10278 08
 A forward-scatter polarimeter for chemical analysis
 NPO-13756 B76-10334 03
 Fast measurement of bacterial susceptibility to antibiotics
 GSFC-10246 B76-10536 05
CHEMICAL ATTACK
 Vapor corrosion inhibitors
 M-FS-19232 B76-10206 04
CHEMICAL CLEANING
 Cleaning carbon steel
 KSC-10689 B76-10275 08
CHEMICAL EQUILIBRIUM
 Multispecies transient simulator
 MSC-14862 B76-10527 04
CHEMICAL REACTORS
 Electrolyte cells measure oxygen fugacities
 MSC-16089 B76-10523 04
CHEMICAL TESTS
 Hydrogen chloride test set
 M-FS-23357 B76-10063 04
CHEMILUMINESCENCE
 Chemiluminescent prediction of service life
 MSC-16010 B76-10191 04
CHIPS
 Transistor-to-substrate bond quality
 M-FS-21931 B76-10137 01
CHLOROPRENE RESINS
 Nomograph for castor-cushion design
 MSC-17094 B76-10229 06
CHROMATOGRAPHY
 Inexpensive portable drug detector
 ARC-10633 B76-10534 05
CINEMATOGRAPHY
 DC drive system for cine/pulse cameras
 MSC-16085 B76-10497 03
CIRCUIT BOARDS
 Multiple-layer printed-wiring trace connector
 LANGLEY-11709 B76-10305 01
 Mask analysis program
 M-FS-23431 B76-10318 01

- Elimination of thermally generated EMF's on PC boards
MSC-16125 B76-10594 08
- CIRCUIT PROTECTION**
Compact reconditioner for Ni/Cd cells
M-FS-23270 B76-10141 01
A nonsaturating dc-to-dc parallel power converter
GSFC-12047 B76-10290 01
Foldback current-limiting for hybrid regulator
M-FS-22995 B76-10301 01
Battery single-cell protection system
LEWIS-12039 B76-10306 01
Overload-protector/fault-indicator circuit
NPO-13592 B76-10308 01
Plug-in circuit monitor
MSC-19455 B76-10311 01
WING Calculating lightning-induced voltages in electrical circuits within an aircraft wing
LEWIS-12108 B76-10351 03
Capacitively-coupled data receiver clipper stage
MSC-14989 B76-10456 01
Active inrush-current limiter
GSFC-11789 B76-10467 01
- CIRCUIT RELIABILITY**
A nonsaturating dc-to-dc parallel power converter
GSFC-12047 B76-10290 01
- CIRCUITS**
Modular design of high frequency circuits
M-FS-23408 B76-10139 01
Surface mounted flat-conductor cable
M-FS-223135 B76-10152 01
Electronic circuits
HQN-10894 B76-10156 01
A linear phase demodulator
GSFC-12018 B76-10291 01
Deflection amplifier for image dissectors
NPO-13079 B76-10449 01
Low-power programmable high-voltage supply
LANGLEY-11316 B76-10458 01
- CIRCULAR POLARIZATION**
Low-cost dual-frequency microwave antenna
MSC-16100 B76-10462 01
- CLAMPING CIRCUITS**
CMOS-compatible tristate cable driver
M-FS-23410 B76-10149 01
Low-frequency sine wave hard-limiting technique
NPO-13230 B76-10309 01
- CLAMPS**
Precision centering vise
KSC-11041 B76-10409 07
Rigid cable support for blind installations
MSC-19473 B76-10585 08
Transducer bonding kit
MSC-19690 B76-10587 08
Vacuum holddown fixture
MSC-19666 B76-10589 08
- CLASSICAL MECHANICS**
Impact response analyses
M-FS-23335 B76-10559 06
- CLASSIFIERS**
Fluid classifier and disseminator
HQN-10748 B76-10089 06
- CLEANING**
Cleaning large tanks and gas bottles
MSC-14966 B76-10430 09
- CLEAR AIR TURBULENCE**
Airport laser-Doppler
M-FS-23423 B76-10174 03
- CLEARANCES**
Paddle-pin alignment test
KSC-10740 B76-10388 06
- CLIMATOLOGY**
Relative humidity from psychrometric data
FRC-10108 B76-10285 09
- CLIPPER CIRCUITS**
Capacitively-coupled data receiver clipper stage
MSC-14989 B76-10456 01
- CLIPS**
Controlled linear clamber/loader
GSFC-12105 B76-10432 08
- COAGULATION**
Standard aerosols for particle velocimeters
M-FS-23075 B76-10050 03
- COAL**
Less-costly activated carbon for sewage treatment
NPO-13877 B76-10516 04
- COAL LIQUEFACTION**
Surfactant-assisted coal liquefaction
NPO-13904 B76-10517 04
- COATING**
Low-reflectivity spectrally selective coating
GSFC-12114 B76-10184 03
- COATINGS**
Solar selective surfaces
LEWIS-12614 B76-10047 03
Comparative thermal fatigue resistance
LEWIS-12563 B76-10062 04
Transparent and flame-retardant potting compounds
MSC-14669 B76-10066 04
Coatings for mullite insulation
LANGLEY-11150 B76-10067 04
Passive thermal-control coatings
M-FS-22794 B76-10071 04
Coating for solar panels
M-FS-23420 B76-10196 04
Parylene coating for circuit components
M-FS-23450 B76-10583 08
- COAXIAL CABLES**
Waveguide-to-coax transition/low-pass filter
NPO-13642 B76-10147 01
Rigid cable support for blind installations
MSC-19473 B76-10585 08
- COBALT ALLOYS**
Comparative thermal fatigue resistance
LEWIS-12563 B76-10062 04
- CODERS**
Control logic for successive-approximation A/D converters
NPO-11937 B76-10010 01
M-ary shift register
NPO-11868 B76-10011 01
Capacitive shaft-angle encoder
ARC-10897 B76-10386 06
Serial-data correlator/code translator
KSC-11025 B76-10454 01
- CODING**
Long binary frame sync words
NPO-13727 B76-10163 02
Concatenated algebraic decoder
MSC-14058 B76-10325 02
Microprogramming for real-time data acquisition
KSC-11027 B76-10328 02
- Serial-data correlator/code translator
KSC-11025 B76-10454 01
Analog-to-digital conversion for radix (-2)
NPO-13093 B76-10465 01
All-digital sequence correlator
NPO-13737 B76-10468 01
Advanced imaging communication system
NPO-13545 B76-10482 02
Code-usage analysis system
MSC-16214 B76-10603 09
FORTRAN code-evaluation system
M-FS-23539 B76-10604 09
- COERCIVITY**
Analog data recording on MnBi film
NPO-13302 B76-10175 03
- COHERENT RADIATION**
Spatially-coherent coupled semiconductor lasers
M-FS-23396 B76-10500 03
- COHERENT SCATTERING**
Dual-purpose holocamera
LEWIS-12166 B76-10505 03
- COLD SURFACES**
Electron-beam welder alignment
MSC-19642 B76-10269 08
- COLD TRAPS**
Separation of water from air samples
ARC-10890 B76-10205 04
- COLD WORKING**
Age-forming aluminum panels
MSC-12648 B76-10281 08
Forming hard aluminum in complex shapes
MSC-19693 B76-10579 08
- COLLIMATORS**
Improved collimator for imaging system
M-FS-22863 B76-10038 03
- COLOR PHOTOGRAPHY**
Frame for daylight photocopying
KSC-11026 B76-10406 07
- COLOR TELEVISION**
Unichromatic-carrier color-TV system
MSC-14683 B76-10026 02
Serial-to-parallel color-TV converter
MSC-14844 B76-10027 02
Color to black-and-white converter
MSC-12618 B76-10346 03
- COLORIMETRY**
Unichromatic-carrier color-TV system
MSC-14683 B76-10026 02
- COLUMNS (PROCESS ENGINEERING)**
Separation of water from air samples
ARC-10890 B76-10205 04
- COMBUSTION CONTROL**
Sustained-arc ignition system
LEWIS-12444 B76-10410 07
- COMBUSTION EFFICIENCY**
Sustained-arc ignition system
LEWIS-12444 B76-10410 07
- COMMERCIAL AIRCRAFT**
Experimental data for new fire-retardant materials
MSC-16022 B76-10361 04
- COMMUNICATION**
Electronic circuits
HQN-10894 B76-10156 01
Demodulator aids synchronization
NPO-13605 B76-10164 02
A linear phase demodulator
GSFC-12018 B76-10291 01
- COMMUNICATION CABLES**
CMOS-compatible tristate cable driver
M-FS-23410 B76-10149 01
Electrical-cable design guide
M-FS-24280 B76-10157 01

COMMUNICATION EQUIPMENT

- Remote access of modem by digital control
 - GSFC-11943 B76-10022 02
 - Solid-state RF switch
 - NPO-13081 B76-10315 01
 - Diplexer switch
 - LANGLEY-11546 B76-10448 01
- COMMUNICATION THEORY**
 - Long binary frame sync words
 - NPO-13727 B76-10163 02
 - Demodulator aids synchronization
 - NPO-13605 B76-10164 02
 - Interleaved cyclic codes
 - KSC-11040 B76-10435 09
- COMPARATORS**
 - Analog-to-binary conversion of video data
 - GSFC-11918 B76-10165 02
- COMPENSATORS**
 - Optimal insensitive-controller synthesis
 - M-FS-21666 B76-10103 06
- COMPENSATORY TRACKING**
 - Horizontally-mounted solar collector
 - M-FS-23349 B76-10256 07
- COMPILERS**
 - Meta-assembler
 - M-FS-23449 B76-10437 09
- COMPONENT RELIABILITY**
 - NASTRAN component-mode synthesis
 - MSC-19632 B76-10104 06
 - Reliability of hybrid microcircuit bonding
 - M-FS-23358 B76-10129 08
 - Elastrostatic-discharge damage to semiconductors
 - LANGLEY-11739 B76-10586 08
- COMPOSITE MATERIALS**
 - Lightweight orthotic appliances
 - LANGLEY-11918 B76-10076 05
 - Metalworking method for composites
 - M-FS-23354 B76-10132 08
 - Graphite-reinforced bone cement
 - NPO-13764 B76-10211 05
 - Ultra-lightweight pressure vessels
 - MSC-14983 B76-10266 08
 - Toroidal converter core
 - NPO-13413 B76-10293 01
 - Composite laminate warpage
 - LEWIS-12615 B76-10355 04
 - Second-generation PMR polyimides
 - LEWIS-12738 B76-10359 04
 - Astronautic structures manual
 - M-FS-23547 B76-10393 06
 - Low-pressure low-temperature molding process
 - MSC-19778 B76-10425 08
 - Mechanical loader for testing composites
 - LEWIS-12432 B76-10548 06
- COMPOSITE STRUCTURES**
 - Ablative-filled honeycomb composites
 - LANGLEY-11180 B76-10273 08
 - Composite stacked moly-permalloy cores
 - NPO-13578 B76-10294 01
 - Improved bonding of honeycomb panels
 - MSC-19560 B76-10428 08
- COMPRESSED AIR**
 - Compressed air cylinder pallet
 - MSC-19217 B76-10203 04
 - Firefighter's breathing system
 - MSC-14733 B76-10208 05
- COMPRESSED GAS**
 - Compressed air cylinder pallet
 - MSC-19217 B76-10203 04

- Gas boost compressor
 - MSC-14757 B76-10415 07
- COMPRESSIBILITY EFFECTS**
 - Liquid-retention canopy
 - M-FS-24133 B76-10092 06
- COMPRESSORS**
 - Improved automobile gas turbine engine
 - LEWIS-12521 B76-10115 07
 - Gas boost compressor
 - MSC-14757 B76-10415 07
- COMPUTER COMPONENTS**
 - Electrostatic analysis of charge-coupled structures
 - M-FS-23507 B76-10472 01
 - Reduction of computer power interruptions
 - MSC-16136 B76-10479 02
- COMPUTER GRAPHICS**
 - Graphic-to-digital conversion system
 - M-FS-24410 B76-10019 02
- COMPUTER PROGRAMMING**
 - FORTAN code-evaluation system
 - M-FS-23539 B76-10604 09
- COMPUTER PROGRAMS**
 - SANDTRACKS World map and stations predictions computer programs
 - GSFC-12099 B76-10190 03
 - DORCA II Dynamic operations requirements and cost analysis program
 - HQN-10834 B76-10289 09
 - Impact response analyses
 - M-FS-23335 B76-10559 06
- COMPUTER STORAGE DEVICES**
 - M-ary shift register
 - NPO-11868 B76-10011 01
- COMPUTER SYSTEMS DESIGN**
 - Prevention of design flaws in multicomputer systems
 - MSC-14920 B76-10330 02
 - Reduction of computer power interruptions
 - MSC-16136 B76-10479 02
- COMPUTER SYSTEMS PROGRAMS**
 - Microprogramming for real-time data acquisition
 - KSC-11027 B76-10328 02
 - Meta-assembler
 - M-FS-23449 B76-10437 09
 - Code-usage analysis system
 - MSC-16214 B76-10603 09
- COMPUTERIZED DESIGN**
 - Economical custom LSI arrays
 - M-FS-23262 B76-10004 01
- COMPUTERIZED SIMULATION**
 - Birth/death process model
 - NPO-13616 B76-10213 05
 - NECAP NASA Energy-cost analysis program
 - LANGLEY-11888 B76-10239 06
- CONCENTRATORS**
 - Fluid classifier and disseminator
 - HQN-10748 B76-10089 06
 - Automated solvent concentrator
 - NPO-13068 B76-10198 04
 - Precolumn for extract concentration
 - NPO-13083 B76-10199 04
 - Fraction-storage unit for drug-identification system
 - NPO-13111 B76-10200 04
 - Improved solar-energy collector
 - NPO-13813 B76-10486 03
- CONCENTRIC CYLINDERS**
 - Concentric-tube differential drive
 - M-FS-22707 B76-10114 07

CONDENSATION

- Venting for condensation in gas lines
 - MSC-19621 B76-10109 06
- CONDENSERS**
 - Integral fan/water separator
 - MSC-14756 B76-10119 07
- CONDUCTIVE HEAT TRANSFER**
 - Vacuum-jacketed line spacer
 - MSC-14365 B76-10083 06
 - Thermal-diode heat pipe
 - ARC-10997 B76-10223 06
 - Thermal network modeling handbook
 - MSC-14964 B76-10236 06
- CONDUCTIVITY**
 - Thermal network modeling handbook
 - MSC-14964 B76-10236 06
- CONNECTORS**
 - Connector contact-ring bus
 - MSC-19480 B76-10146 01
 - Manufacture of flat-conductor cable
 - M-FS-23121 B76-10155 01
 - Electrical-cable design guide
 - M-FS-24280 B76-10157 01
 - Multiple-layer printed-wiring trace connector
 - LANGLEY-11709 B76-10305 01
- CONFERENCES**
 - Terrestrial photovoltaic measurements workshop
 - LEWIS-12643 B76-10350 03
- CONICAL FLOW**
 - Conical diffuser for fuel cells
 - MSC-14026 B76-10255 07
- CONNECTORS**
 - Connector contact-ring bus
 - MSC-19480 B76-10146 01
 - Soft seat A-N fitting for vacuum use
 - LEWIS-10130 B76-10408 07
- CONSOLES**
 - Graphic-to-digital conversion system
 - M-FS-24410 B76-10019 02
- CONSTANTAN**
 - One-wire thermocouple
 - MSC-16220 B76-10556 06
 - Aluminum transfer method for plating plastics
 - MSC-16221 B76-10593 08
- CONSTRUCTION**
 - NASA technology utilization house
 - LANGLEY-12134 B76-10570 07
- CONTACT RESISTANCE**
 - Semiconductor ohmic contact
 - LANGLEY-11691 B76-10461 01
- CONTAINERLESS MELTS**
 - Acoustic-energy shaping of meltable metals
 - NPO-13802 B76-10423 08
- CONTAINERS**
 - Ultra-lightweight pressure vessels
 - MSC-14983 B76-10266 08
- CONTAINMENT**
 - Liquid-retention canopy
 - M-FS-24133 B76-10092 06
- CONTAMINANTS**
 - Introducing controlled matter into a fluid system
 - M-FS-24309 B76-10093 06
 - Laser particulate spectrometer
 - MSC-14969 B76-10331 03
 - Purity test for copper-plating solutions
 - M-FS-19298 B76-10360 04
 - Detecting contamination on a metal surface
 - M-FS-19260 B76-10552 06

CONTAMINATION

- Increased safety in mercury-containing devices
M-FS-23308 876-10013 01
- Vacuum-ultraviolet reflectometer
MSC-14995 876-10336 03
- Monitor for optical-window contamination
ARC-10947 876-10345 03
- Contamination monitoring of fluids
KSC-11037 876-10382 06

CONTINUOUS SPECTRA

- Shadow mask for X-ray spectrometer
GSFC-12131 876-10348 03

CONTINUOUS WAVE LASERS

- Low-threshold light-emitting-diode laser
LANGLEY-11477 876-10176 03

CONTINUUM MECHANICS

- COMOC a finite-element algorithm for the Navier-Stokes equations
LANGLEY-11480 876-10241 06

CONTOURS

- Visual projection reticle
ARC-10976 876-10590 08
- Oblique orthographic projections and contour plots
LANGLEY-11877 876-10601 09

CONTROL

- Fail-safe hydraulic shaker protection
NPO-13726 876-10218 06

CONTROL EQUIPMENT

- Dispensing a measured quantity of a liquid
M-FS-21163 876-10574 07

CONTROL STABILITY

- Determining aircraft stability and control derivatives
FRC-10109 876-10402 06

CONTROL VALVES

- Dispensing a measured quantity of a liquid
M-FS-21163 876-10574 07
- Long-life ball-valve design
M-FS-19282 876-10576 07

CONTROLLABILITY

- Omnidirectional wheel
M-FS-21309 876-10575 07

CONTROLLERS

- Optimal insensitive-controller synthesis
M-FS-21666 876-10103 06
- Power-control switch
M-FS-23395 876-10148 01

CONVECTION

- Thermal network modeling handbook
MSC-14964 876-10236 06

CONVECTIVE FLOW

- Heat pipe technology
HQN-10901 876-10233 06
- Multidimensional heat conduction
MSC-16159 876-10509 03

CONVECTIVE HEAT TRANSFER

- MINIVER Miniature version of real/ideal gas aero-heating and ablation computer program
M-FS-21951 876-10105 06
- Cavitating performance of pumping machinery
LEWIS-12423 876-10394 06
- Heat-transfer coefficients of pin-finned cylinders
LEWIS-12557 876-10554 06
- Aluminum transfer method for plating plastics
MSC-16221 876-10593 08

CONVERTERS

- Serial-to-parallel color-TV converter
MSC-14844 876-10027 02

COOLANTS

- Noncontaminating method for visualizing gas flow
LEWIS-12076 876-10088 06

COOLING SYSTEMS

- Sublimator/evaporator heat sink
ARC-10912 876-10384 06
- Liquid-cooled bra for cancer detection
ARC-11007 876-10533 05
- Improved shelf for electronic modules
NPO-13158 876-10578 07

COORDINATE TRANSFORMATIONS

- Curvilinear bicubic-spline-fit interpolation
LANGLEY-11391 876-10434 09

COORDINATION

- Manual dexterity evaluator
LANGLEY-12022 876-10209 05

COPPER

- Purity test for copper-plating solutions
M-FS-19298 876-10360 04

CORE STORAGE

- Digital video image system
M-FS-23322 876-10166 02

CORRELATION

- Development ephemeris number 96
NPO-14002 876-10507 03

CORRELATION DETECTION

- Subcarrier signal combiner for arrayed antennas
NPO-13723 876-10329 02

CORRELATORS

- All-digital sequence correlator
NPO-13737 876-10468 01

CORROSION

- Handbook of liquid metals
M-FS-23355 876-10072 04
- Vapor corrosion inhibitors
M-FS-19232 876-10206 04

CORROSION PREVENTION

- Cleaning carbon steel
KSC-10689 876-10275 08

CORROSION RESISTANCE

- Specific-ion electrodes for measuring Ag ions
MSC-14906 876-10068 04

CORRUGATED PLATES

- Metal structures with parallel pores
GSFC-10984 876-10131 08

COST ANALYSIS

- NECAP NASA Energy-cost analysis program
LANGLEY-11888 876-10239 06
- Learning/cost-improvement curves
M-FS-23429 876-10287 09
- DORCA II Dynamic operations requirements and cost analysis program
HQN-10834 876-10289 09

COST ESTIMATES

- Learning/cost-improvement curves
M-FS-23429 876-10287 09

COUNTERS

- M-ary shift register
NPO-11868 876-10011 01

COUNTING CIRCUITS

- Two-dimensional photon detector
M-FS-23325 876-10048 03
- Counting digital filter
NPO-11821 876-10296 01
- Circulating-lines digital filter
NPO-11831 876-10297 01
- Partitioned counting digital filter
NPO-11832 876-10298 01
- RAM digital filter
NPO-13659 876-10316 01
- Recording-tape position sensor
GSFC-12056 876-10577 07

COUNTING RATE COMPUTERS

- Circulating-lines digital filter
NPO-11831 876-10297 01
- Partitioned counting digital filter
NPO-11832 876-10298 01
- Hybrid digital-analog implementation of digital filters
NPO-11833 876-10299 01

COUPLING

- High-torque open-end wrench
NPO-13541 876-10405 07

COUPLING CIRCUITS

- Superconductive neuristor R-junction
HQN-10871 876-10003 01

COUPLINGS

- Flexible fitting for fluid lines
MSC-17780 876-10277 08
- Microprogramable module
MSC-19456 876-10312 01
- Soft seat A-N fitting for vacuum use
LEWIS-10130 876-10408 07

COVARIANCE

- Multivariate normal integration
M-FS-22867 876-10288 09

CRACK PROPAGATION

- Crack-growth analysis
M-FS-23320 876-10243 06

CRACKING (FRACTURING)

- Crack-growth analysis
M-FS-23320 876-10243 06
- Repair of fused silica platens
MSC-19713 876-10276 08
- Ultrasonic measurement of fracture toughness
LEWIS-12642 876-10372 06
- Stress-corrosion cracking due to hydrazine
ARC-11093 876-10526 04

CRANES

- Cable-load equalization system
MSC-17494 876-10230 06

CRITICAL LOADING

- Energy-absorbing attenuator
MSC-17473 876-10419 07

CROP GROWTH

- Remote sensing of vegetation and soil
GSFC-11976 876-10490 03

CROP IDENTIFICATION

- CAMSP Classification and Mensuration Software Package
MSC-14979 876-10600 09

CROSSLINKING

- Polymeric foams stable at high temperatures
ARC-11008 876-10065 04

CROSSTALK

- Biased-circuit digital data line receiver
MSC-14967 876-10457 01

CRYOGENIC EQUIPMENT

- Improved cryogenic shaft seals
M-FS-19153 876-10080 06
- Vacuum-jacketed line spacer
MSC-14365 876-10083 06

CRYOGENIC FLUID STORAGE

- Liquid-retention canopy
M-FS-24133 876-10092 06
- Vapor/liquid interface sensor
MSC-12474 876-10220 06
- Cryogenic storage tank thermal analysis
MSC-19103 876-10234 06
- External heater for cryogenic vessels
MSC-14056 876-10337 03

CRYOGENIC FLUIDS

- Vapor/liquid interface sensor
MSC-12474 876-10220 06

Cavitating performance of pumping machinery
LEWIS-12423 876-10394 06

CRYOGENICS
Reducing cold flow in elastomeric O-rings
M-FS-24336 876-10086 06

CRYOTRAPPING
Separation of water from air samples
ARC-10890 876-10205 04

CRYSTAL DEFECTS
Soldering high-impedance Nichrome wire
M-FS-1457 876-10264 08

CRYSTAL GROWTH
Growing crystals from eutectic melts
M-FS-22926 876-10202 04
RF shaping of silicon ribbon
M-FS-23424 876-10258 08
Epitaxial growth of Ga_{1-x}Al_xAs on GaP
GSFC-11826 876-10261 08
Semiconductor ohmic contact
LANGLEY-11691 876-10461 01
Nucleation of electronic-crystal regions
M-FS-23049 876-10524 04

CRYSTAL STRUCTURE
Nucleation of electronic-crystal regions
876-10524 04
Crystal orientation for solid-state photolithography
LANGLEY-11940 876-10582 08

CRYSTAL SURFACES
Soldering high-impedance Nichrome wire
M-FS-1457 876-10264 08
Fabrication and applications of electrets
M-FS-23437 876-10429 08

CRYSTALLOGRAPHY
High-resolution electron microscope
NPO-13811 876-10499 03
Nucleation of electronic-crystal regions
M-FS-23049 876-10524 04

CUBIC EQUATIONS
Math model of 3-D aircraft configuration
LANGLEY-12029 876-10400 06

CURIE TEMPERATURE
Analog data recording on MnBi film
NPO-13302 876-10175 03

CURING
New diamine hardeners for epoxies
LANGLEY-11823 876-10522 04

CURRENT AMPLIFIERS
Power-control switch
M-FS-23395 876-10148 01

CURRENT DENSITY
Resistance heating elements with specific heating profiles
LEWIS-10719 876-10095 06

CURRENT REGULATORS
Power-control switch
M-FS-23395 876-10148 01
Fluorescent dimming ballast
MSC-14937 876-10292 01
Foldback current-limiting for hybrid regulator
M-FS-22995 876-10301 01
Active inrush-current limiter
GSFC-11789 876-10467 01

CURVE FITTING
Math model of 3-D aircraft configuration
LANGLEY-12029 876-10400 06
Contouring randomly spaced data
LANGLEY-12044 876-10436 09

CURVED PANELS

Age-forming aluminum panels
MSC-12648 876-10281 08

CUSHIONS

Nomograph for castor-cushion design
MSC-17094 876-10229 06
Viscoelastic foam cushion
ARC-11089 876-10525 04

CUTTERS

Rotary broaches
M-FS-23374 876-10248 07

CUTTING

Rotary broaches
M-FS-23374 876-10248 07

CYCLIC LOADS

Mechanical loader for testing composites
LEWIS-12432 876-10548 06

CYLINDRICAL BODIES

Heat-transfer coefficients of pin-finned cylinders
LEWIS-12557 876-10554 06

CYLINDRICAL SHELLS

General instability analysis
M-FS-23407 876-10563 06

CYLINDRICAL TANKS

Compressed air cylinder pallet
MSC-19217 876-10203 04

CZOCHEWSKI METHOD

Nucleation of electronic-crystal regions
M-FS-23049 876-10524 04

D**DAMPING**

Low-onset-rate energy absorber
MSC-12279 876-10385 06

DARKROOMS

Frame for daylight photocopying
KSC-11026 876-10406 07

DATA ACQUISITION

Data-storage compression scheme
NPO-13488 876-10017 02
General-purpose data link
M-FS-22714 876-10025 02
SANDTRACKS World map and stations predictions computer programs
GSFC-12099 876-10190 03
Counting digital filter
NPO-11821 876-10296 01
Circulating-lines digital filter
NPO-11831 876-10297 01
Partitioned counting digital filter
NPO-11832 876-10298 01
RAM digital filter
NPO-13659 876-10316 01
Microprogramming for real-time data acquisition
KSC-11027 876-10328 02
Automated EEG acquisition
MSC-16111 876-10364 05
Flexible high-speed instrumentation system
FRC-10110 876-10483 02
Data system for multiplexed water-current meters
M-FS-23343 876-10493 03
Data-management and information system
NPO-13716 876-10602 09

DATA COLLECTION PLATFORMS

Remote water-monitoring system
LANGLEY-11973 876-10365 05

DATA COMPRESSION

Data-storage compression scheme
NPO-13488 876-10017 02

DATA CONVERSION ROUTINES

Analog-to-digital conversion for radix (-2)
NPO-13093 876-10465 01

DATA CONVERTERS

A/D converter
LANGLEY-11319 876-10009 01
Control logic for successive-approximation A/D converters
NPO-11937 876-10010 01
Serial-to-parallel color-TV converter
MSC-14844 876-10027 02
Analog-to-binary conversion of video data
GSFC-11918 876-10165 02
Analog-to-digital conversion for radix (-2)
NPO-13093 876-10465 01
Miniature-angular-position transducer
LANGLEY-11999 876-10555 06

DATA CORRELATION

Long binary frame sync words
NPO-13727 876-10163 02

DATA LINKS

General-purpose data link
M-FS-22714 876-10025 02
Microprogramed telemetry processor
ARC-11061 876-10460 01

DATA MANAGEMENT

Data-management and information system
NPO-13716 876-10602 09
Information retrieval and display system
M-FS-23510 876-10606 09

DATA PROCESSING

CMOS-compatible tristate cable driver
M-FS-23410 876-10149 01
Automatic fire/weather data station
ARC-10993 876-10160 02
Manchester transition tracking loop (MTTL)
MSC-14842 876-10319 02
Processing equations for state-space models
LEWIS-12555 876-10438 09
Doppler extraction with a digital VCO
MSC-14814 876-10452 01
Biased-circuit digital data line receiver
MSC-14967 876-10457 01
Microprogramed telemetry processor
ARC-11061 876-10460 01
All-digital sequence correlator
NPO-13737 876-10468 01
Instrumentation for measuring low-level currents/voltages
MSC-14855 876-10480 02
Transpose of finite-element data
MSC-19644 876-10564 06
Document restoration by computer techniques
HQN-10910 876-10597 09
Data-management and information system
NPO-13716 876-10602 09
Code-usage analysis system
MSC-16214 876-10603 09
Information retrieval and display system
M-FS-23510 876-10606 09
Input/output error analyzer
GSFC-12132 876-10610 09

DATA PROCESSING EQUIPMENT
Biased-circuit digital data line receiver
MSC-14967 876-10457 01

DATA RECORDERS

- Interactive imaging and data processing
NPO-13655 876-10167 02
- Signal processing and display for
electrochemical data
LANGLEY-11922 876-10327 02
- Multiple-bubble detector
LANGLEY-12043 876-10444 01

DATA RECORDING

- Fast pressure-sensor system
LANGLEY-12003 876-10087 06
- Electronic circuits
HQN-10894 876-10156 01
- Analog data recording on MnBi film
NPO-13302 876-10175 03

DATA REDUCTION

- Contouring randomly spaced data
LANGLEY-12044 876-10436 09
- Transpose of finite-element data
MSC-19644 876-10564 06
- Oblique orthographic projections and
contour plots
LANGLEY-11877 876-10601 09
- Code-usage analysis system
MSC-16214 876-10603 09
- Transfer-function parameters
LEWIS-12612 876-10605 09
- Input/output error analyzer
GSFC-12132 876-10610 09

DATA RETRIEVAL

- General-purpose data link
M-FS-22714 876-10025 02
- Photorefractive page composer
M-FS-23419 876-10171 03
- PN ranging/telemetry transmission
GSFC-12017 876-10323 02

DATA SAMPLING

- General-purpose data link
M-FS-22714 876-10025 02
- Partitioned counting digital filter
NPO-11832 876-10298 01
- Hybrid digital-analog implementation of
digital filters
NPO-11833 876-10299 01
- Low-frequency sine wave hard-limiting
technique
NPO-13230 876-10309 01

DATA SMOOTHING

- Contouring randomly spaced data
LANGLEY-12044 876-10436 09

DATA STORAGE

- M-ary shift register
NPO-11868 876-10011 01
- Data-storage compression scheme
NPO-13488 876-10017 02
- General-purpose data link
M-FS-22714 876-10025 02
- Readout method for stored information
NPO-13243 876-10029 02
- Voltage control for corona charging
thermoplastics
M-FS-23102 876-10043 03
- Permanent holographic storage medium
M-FS-22588 876-10044 03
- Electrode structure for uniform corona
discharge
M-FS-22617 876-10045 03
- Photorefractive page composer
M-FS-23419 876-10171 03
- Continuous-data FIFO bubble shift
register
LANGLEY-11862 876-10443 01
- Microprogramed telemetry processor
ARC-11061 876-10460 01
- Data-management and information
system
NPO-13716 876-10602 09

DATA SYSTEMS

- Remote access of modem by digital
control
GSFC-11943 876-10022 02
- General-purpose data link
M-FS-22714 876-10025 02
- Fast pressure-sensor system
LANGLEY-12003 876-10087 06
- Interactive imaging and data processing
NPO-13655 876-10167 02
- Flexible high-speed instrumentation
system
FRC-10110 876-10483 02

DATA TRANSMISSION

- Remote access of modem by digital
control
GSFC-11943 876-10022 02
- General-purpose data link
M-FS-22714 876-10025 02
- Long binary frame sync words
NPO-13727 876-10163 02
- Voltage-offset reduction in data
transmitters
MSC-14933 876-10321 02
- Binary/BCD-to-ASCII data converter
GSFC-12044 876-10322 02
- Remote water-monitoring system
LANGLEY-11973 876-10365 05
- Serial-data correlator/code translator
KSC-11025 876-10454 01
- Microprogramed telemetry processor
ARC-11061 876-10460 01
- Tracking a phase-shift-keyed signal
MSC-16170 876-10481 02
- Advanced imaging communication
system
NPO-13545 876-10482 02

DATUM (ELEVATION)

- Leveling apparatus for precision
instruments
ARC-10981 876-10572 07

DECAY

- Thermoluminescence for forensic
analysis
NPO-11607 876-10192 04

DECAY RATES

- Fabrication and applications of electrets
M-FS-23437 876-10429 08

DECELERATION

- Low-onset-rate energy absorber
MSC-12279 876-10385 06

DECIMAL TO BINARY CONVERTERS

- Binary/BCD-to-ASCII data converter
GSFC-12044 876-10322 02

DECISION THEORY

- Demodulator aids synchronization
NPO-13605 876-10164 02

DECONTAMINATION

- Cleaning large tanks and gas bottles
MSC-14966 876-10430 09

DEEP SPACE INSTRUMENTATION FACILITY

- Advanced imaging communication
system
NPO-13545 876-10482 02

DEFECTS

- Faster X-ray analysis of semiconductor
wafers
M-FS-23315 876-10225 06

DEFORMATION

- Diffusion brazing nickel-plated stainless
steel
MSC-19322 876-10265 08
- General instability analysis
M-FS-23407 876-10563 06

DEGRADATION

- Chemiluminescent prediction of service
life
MSC-16010 876-10191 04

DEGREES OF FREEDOM

- NASTRAN component-mode synthesis
MSC-19632 876-10104 06

DEHUMIDIFICATION

- Integral fan/water separator
MSC-14756 876-10119 07
- Separation of water from air samples
ARC-10890 876-10205 04

DEHYDRATED FOOD

- Meal system for the elderly
MSC-16062 876-10530 05

DEICERS

- External heater for cryogenic vessels
MSC-14056 876-10337 03

DELTA MODULATION

- Data-storage compression scheme
NPO-13488 876-10017 02
- Serial-to-parallel color-TV converter
MSC-14844 876-10027 02

DEMULATION

- Doppler extraction with a digital VCO
MSC-14814 876-10452 01

DEMULATORS

- Demodulator aids synchronization
NPO-13605 876-10164 02

DENTISTRY

- Measuring mandibular motions
ARC-10956 876-10362 05

DEPENDENT VARIABLES

- Control system design
LEWIS-12556 876-10404 06

DEPOLARIZATION

- A forward-scatter polarimeter for
chemical analysis
NPO-13756 876-10334 03

DEPOSITION

- 3-D foam adhesive deposition
M-FS-22739 876-10271 08
- Molecular beam generator
MSC-14996 876-10353 04

DEPTH MEASUREMENT

- Electro-optical liquid depth sensor
M-FS-22921 876-10024 02

DERMATOLOGY

- Multispectral imaging for medical
diagnosis
NPO-13922 876-10540 05

DESALINIZATION

- Membrane has high urea-rejection
properties
ARC-10980 876-10518 04

DESIGN ANALYSIS

- Prevention of design flaws in
multicomputer systems
MSC-14920 876-10330 02

DETECTION

- Inexpensive tags for tubes or cables
LEWIS-12676 876-10584 08

DETERIORATION

- Pump failure monitor
M-FS-23366 876-10219 06

DEW

- Quartz-crystal-oscillator hygrometer
GSFC-12153 876-10349 03

DIAGNOSIS

- Occlusive-cuff controller
MSC-14836 876-10207 05
- Physician's modern 'Black Bag'
MSC-14936 876-10212 05
- Disposable biomedical electrode
MSC-14623 876-10363 05
- Caution and warning system
MSC-16046 876-10531 05

- Multispectral imaging for medical diagnosis
NPO-13922 B76-10540 05
- DIAMINES**
New diamine hardeners for epoxies
LANGLEY-11823 B76-10522 04
- DIAPHRAGMS**
Fast pressure-sensor system
LANGLEY-12003 B76-10087 06
- DIELECTRIC POLARIZATION**
All-tantalum electrolytic capacitor
M-FS-23462 B76-10424 08
- DIELECTRIC PROPERTIES**
Improved wet-slug capacitor
LANGLEY-11720 B76-10008 01
- DIELECTRICS**
Fabrication and applications of electrets
M-FS-23437 B76-10429 08
- DIES**
Economical custom LSI arrays
M-FS-23262 B76-10004 01
- DIETS**
Meal system for the elderly
MSC-16062 B76-10530 05
- DIFFERENTIAL AMPLIFIERS**
Deflection amplifier for image dissectors
NPO-13079 B76-10449 01
- DIFFERENTIAL EQUATIONS**
DYNGEN
LEWIS-12506 B76-10108 06
Guide for testing numerical-integration subroutines
NPO-11644 B76-10135 09
Rapid kinetics
LANGLEY-12140 B76-10529 04
- DIFFERENTIAL THERMAL ANALYSIS**
Reliability of hybrid microcircuit bonding
M-FS-23358 B76-10129 08
- DIFFACTION**
Field distribution in a thin lens
LANGLEY-11392 B76-10179 03
- DIFFACTION PATTERNS**
Elimination of color rings on film negatives
GSFC-12110 B76-10498 03
- DIFFUSERS**
Conical diffuser for fuel cells
MSC-14026 B76-10255 07
- DIFFUSION**
Handbook of liquid metals
M-FS-23355 B76-10072 04
Systems improved numerical differencing analyzer
MSC-13805 B76-10609 09
- DIFFUSION WELDING**
Combined joining process for dissimilar metals A concept
MSC-19323 B76-10127 08
Diffusion brazing nickel-plated stainless steel
MSC-19322 B76-10265 08
- DIGITAL DATA**
A linear phase demodulator
GSFC-12018 B76-10291 01
Concatenated algebraic decoder
MSC-14058 B76-10325 02
All-digital sequence correlator
NPO-13737 B76-10468 01
- DIGITAL FILTERS**
Counting digital filter
NPO-11821 B76-10296 01
Circulating-lines digital filter
NPO-11831 B76-10297 01
Partitioned counting digital filter
NPO-11832 B76-10298 01
- Hybrid digital-analog implementation of digital filters
NPO-11833 B76-10299 01
RAM digital filter
NPO-13659 B76-10316 01
Signal enhancement filters
MSC-14907 B76-10453 01
Document restoration by computer techniques
HQN-10910 B76-10597 09
- DIGITAL INTEGRATORS**
Simplified deflection-coil linearity testing
M-FS-23400 B76-10180 03
- DIGITAL RADAR SYSTEMS**
Signal enhancement filters
MSC-14907 B76-10453 01
- DIGITAL SYSTEMS**
Control logic for successive-approximation A/D converters
NPO-11937 B76-10010 01
M-ary shift register
NPO-11868 B76-10011 01
Sensor for analog speed controls
LEWIS-12597 B76-10020 02
Remote access of modem by digital control
GSFC-11943 B76-10022 02
Instrumentation for measuring low-level currents/voltages
MSC-14855 B76-10480 02
- DIGITAL TECHNIQUES**
Control logic for successive-approximation A/D converters
NPO-11937 B76-10010 01
M-ary shift register
NPO-11868 B76-10011 01
Sensor for analog speed controls
LEWIS-12597 B76-10020 02
Serial-data correlator/code translator
KSC-11025 B76-10454 01
All-digital sequence correlator
NPO-13737 B76-10468 01
Code-usage analysis system
MSC-16214 B76-10603 09
Input/output error analyzer
GSFC-12132 B76-10610 09
- DIGITAL TO ANALOG CONVERTERS**
Counting digital filter
NPO-11821 B76-10296 01
Circulating-lines digital filter
NPO-11831 B76-10297 01
Subcarrier signal combiner for arrayed antennas
NPO-13723 B76-10329 02
- DIMENSIONAL MEASUREMENT**
Electrical-conduit sizing gage
MSC-19491 B76-10150 01
Precision measurement of changes in physical dimensions
M-FS-23527 B76-10543 06
- DIMENSIONAL STABILITY**
Precision measurement of changes in physical dimensions
M-FS-23527 B76-10543 06
- DIMMING**
Fluorescent dimming ballast
MSC-14937 B76-10292 01
- DIPLEXERS**
Diplexer switch
LANGLEY-11546 B76-10448 01
- DISCONTINUITY**
Effects of mismatch on group delay of microwave transmission
NPO-13863 B76-10478 02
- DISCRIMINATORS**
Pulse amplitude discriminator threshold calibration
GSFC-11912 B76-10023 02
Analog-to-binary conversion of video data
GSFC-11918 B76-10165 02
- DISPENSERS**
Dispensing a measured quantity of a liquid
M-FS-21163 B76-10574 07
- DISPLAY DEVICES**
Calibration of image dissector tubes
M-FS-22208 B76-10055 03
Fast pressure-sensor system
LANGLEY-12003 B76-10087 06
Digital video image system
M-FS-23322 B76-10166 02
Interactive imaging and data processing
NPO-13655 B76-10167 02
Multiplane binocular visual display system
ARC-10808 B76-10168 02
Inexpensive low-voltage solid-state alarm
LEWIS-12544 B76-10320 02
Signal processing and display for electrochemical data
LANGLEY-11922 B76-10327 02
Solid-state turn-coordinator display
LANGLEY-12090 B76-10451 01
Video simulator with electronic ranging
MSC-14965 B76-10474 02
Full-color hybrid display
ARC-10903 B76-10477 02
Caution and warning system
MSC-16046 B76-10531 05
- DISSOLVING**
Cleaning large tanks and gas bottles
MSC-14966 B76-10430 09
- DISTRIBUTED AMPLIFIERS**
Wideband distribution amplifier
NPO-13256 B76-10307 01
- DIVING (UNDERWATER)**
Hand fin for swimming
M-FS-21632 B76-10122 07
- DOCUMENT STORAGE**
Information retrieval and display system
M-FS-23510 B76-10606 09
- DOCUMENTATION**
Vapor corrosion inhibitors
M-FS-19232 B76-10206 04
Annealing strained alloy 718
M-FS-19242 B76-10284 08
- DOLLIES**
Nomograph for castor-cushion design
MSC-17094 B76-10229 06
Mechanical positioner
MSC-15817 B76-10245 07
- DOMAIN WALL**
Analog data recording on MnBi film
NPO-13302 B76-10175 03
Multiple-bubble detector
LANGLEY-12043 B76-10444 01
- DOORS**
Load-regulating latch
MSC-19535 B76-10252 07
Door latch with through-access hole
MSC-19634 B76-10414 07
- DOPPLER EFFECT**
Laser-Doppler measurement of air turbulence
M-FS-23155 B76-10031 03
Doppler extraction with a digital VCO
MSC-14814 B76-10452 01

DOPPLER NAVIGATION

Standard aerosols for particle velocimeters
M-FS-23075 B76-10050 03
Wind velocity measurement
M-FS-23362 B76-10172 03

DOPPLER RADAR

Airport laser-Doppler
M-FS-23423 B76-10174 03

DOSIMETERS

Proton tissue dose
LANGLEY-11802 B76-10078 05

DOWN-CONVERTERS

Open-loop digital frequency multiplier
MSC-12709 B76-10447 01

DOWNTIME

Frozen-fluid line repair
MSC-19132 B76-10227 06
Jet engine stator-blade removal tool
MSC-16000 B76-10420 07

DRAWING

Metalworking method for composites
M-FS-23354 B76-10132 08

DRILL BITS

Method of removing drilling chips
M-FS-19235 B76-10262 08

DRILLING

Rotary broaches
M-FS-23374 B76-10248 07
Hand and power tools
HQN-10892 B76-10257 07
Method of removing drilling chips
M-FS-19235 B76-10262 08

DRUGS

Automated solvent concentrator
NPO-13068 B76-10198 04
Precolumn for extract concentration
NPO-13083 B76-10199 04
Fraction-storage unit for drug-identification system
NPO-13111 B76-10200 04

DRYING APPARATUS

Integral fan/water separator
MSC-14756 B76-10119 07
Low-voltage motor heater
KSC-10651 B76-10304 01

DUCTILITY

Annealing strained alloy 718
M-FS-19242 B76-10284 08

DUCTS

Double-focusing mass spectrometer
NPO-13663 B76-10183 03
Attenuation of sound in ducts with acoustic treatment
LEWIS-12686 B76-10226 06
Impedance of curved ducts
LEWIS-12636 B76-10237 06

DUPLEXERS

Solid-state RF switch
NPO-13081 B76-10315 01

DYE LASERS

Two-wavelength dye laser
LANGLEY-12012 B76-10170 03

DYNAMIC LOADS

Dynamic load attenuator
MSC-17472 B76-10416 07
Impact of a solid body with water
M-FS-23512 B76-10560 06

DYNAMIC MODULUS OF ELASTICITY

Ultrasonic monitoring of crack extension
LEWIS-12632 B76-10547 06

DYNAMIC PRESSURE

Indicated mean-effective pressure instrument
LEWIS-12661 B76-10542 06

DYNAMIC STABILITY

Pulse detector
MSC-16268 B76-10557 06
Stability of an elastic airplane
ARC-11086 B76-10568 06

DYNAMOMETERS

Air-suspended dynamometer table
NPO-13794 B76-10376 06

E**EARTH RESOURCES**

Remote sensing of natural resources
HQN-10899 B76-10238 06
DAM - detection and mapping
MSC-16096 B76-10370 05

EARTH RESOURCES INFORMATION SYSTEM

Remote sensing of vegetation and soil
GSFC-11976 B76-10490 03
CAMSP Classification and Mensuration Software Package
MSC-14979 B76-10600 09

ECCENTRICS

Heavy-duty mechanical sequencer
MSC-19536 B76-10418 07

ECHOCARDIOGRAPHY

Biomedical ultrasonoscope
ARC-10994 B76-10537 05

ECOLOGY

Quantitative bioluminescent detection of bacteria
GSFC-12003 B76-10073 05

EFFICIENCY

Learning/cost-improvement curves
M-FS-23429 B76-10287 09

EFFLUENTS

Hydrofoil controls outfall effluents in rivers and oceans
LANGLEY-12045 B76-10488 03

EIGENVALUES

Linear stochastic optimal control and estimation
LEWIS-12505 B76-10134 09

EIGENVECTORS

Linear stochastic optimal control and estimation
LEWIS-12505 B76-10134 09
Linear stochastic optimal control and estimation
LEWIS-12540 B76-10607 09

EJECTORS

REJECT
LEWIS-12375 B76-10110 06

ELASTIC BODIES

Impact response analyses
M-FS-23335 B76-10559 06

ELASTIC PROPERTIES

Analysis of bonded joints
LANGLEY-11871 B76-10231 06
Astronautic structures manual
M-FS-23547 B76-10393 06

ELASTOHYDRODYNAMICS

Fundamentals of fluid sealing
LEWIS-12683 B76-10392 06

ELASTOMERS

Permanent holographic storage medium
M-FS-22588 B76-10044 03
Cost saving synergistic shaft seal
LEWIS-12119 B76-10081 06
Reducing cold flow in elastomeric O-rings
M-FS-24336 B76-10086 06
Flame-resistant elastomeric polymers
MSC-16078 B76-10357 04

ELASTOMETERS

Laser extensometer
M-FS-19259 B76-10030 03

ELECTRETS

Fabrication and applications of electrets
M-FS-23437 B76-10429 08

ELECTRIC BATTERIES

Battery-cell thermal test facility
M-FS-23040 B76-10124 08
Compact reconditioner for Ni/Cd cells
M-FS-23270 B76-10141 01
Battery single-cell protection system
LEWIS-12039 B76-10306 01

ELECTRIC CHOPPERS

DC-to-DC conversion with voltage multipliers
LEWIS-12297 B76-10138 01

ELECTRIC CONDUCTORS

High-temperature flat-conductor cable
M-FS-23451 B76-10144 01
Testing flat-conductor cable
M-FS-23174 B76-10151 01
Surface mounted flat-conductor cable
M-FS-223135 B76-10152 01
Temperature rise of installed FCC
M-FS-23127 B76-10153 01
Paddle-pin alignment test
KSC-10740 B76-10388 06

ELECTRIC CONNECTORS

Electrical-splicing connector
M-FS-24254 B76-10300 01
Multiple-layer printed-wiring trace connector
LANGLEY-11709 B76-10305 01
Microprogrammable module
MSC-19456 B76-10312 01
Prefabricated strain-gage connectors
MSC-19522 B76-10595 08

ELECTRIC CONTACTS

Solar cell electrical connections
LEWIS-12293 B76-10260 08
Pulse detector
MSC-16268 B76-10557 06

ELECTRIC CORONA

Voltage control for corona charging thermoplastics
M-FS-23102 B76-10043 03
Electrode structure for uniform corona discharge
M-FS-22617 B76-10045 03
Fabrication and applications of electrets
M-FS-23437 B76-10429 08

ELECTRIC CURRENT

Determination of radiative current in LED's
GSFC-12034 B76-10042 03

ELECTRIC DISCHARGES

Elastrostatic-discharge damage to semiconductors
LANGLEY-11739 B76-10586 08

ELECTRIC ENERGY STORAGE

Composite stacked moly-permalloy cores
NPO-13578 B76-10294 01

ELECTRIC EQUIPMENT

Fluorescent-lamp power supply
MSC-14900 B76-10140 01

ELECTRIC EQUIPMENT TESTS

Paddle-pin alignment test
KSC-10740 B76-10388 06

ELECTRIC GENERATORS

Feedback arrangement for regenerative switches
NPO-13060 B76-10302 01

ELECTRIC IGNITION

Electrostatic-discharge ignition
NPO-13798 B76-10487 03

ELECTRIC MOTORS

- Low-voltage motor heater
 KSC-10651 876-10304 01
 Ironless-armature brushless motor
 GSFC-11880 876-10476 02
 Induction motor analysis
 LEWIS-12687 876-10484 02

ELECTRIC POWER SUPPLIES

- Foldback current-limiting for hybrid regulator
 M-FS-22995 876-10301 01
 Feedback arrangement for regenerative switches
 NPO-13060 876-10302 01
 Inductorless voltage multiplier/converter
 NPO-13757 876-10445 01
 Low-power programmable high-voltage supply
 LANGLEY-11316 876-10458 01
 Power supply with optical-isolator control
 HQN-10827 876-10466 01

ELECTRIC POWER TRANSMISSION

- Free-space microwave-power transmission
 M-FS-23443 876-10162 02

ELECTRIC RELAYS

- Reduction of computer power interruptions
 MSC-16136 876-10479 02

ELECTRIC SWITCHES

- Plug-in light switches
 M-FS-24183 876-10001 01

ELECTRIC TERMINALS

- Universal solar-cell terminal
 M-FS-23505 876-10450 01
 Prefabricated strain-gage connectors
 MSC-19522 876-10595 08

ELECTRIC WELDING

- Synchronized backside-weld follower
 M-FS-24454 876-10272 08

ELECTRIC WIRE

- High-temperature flat-conductor cable
 M-FS-23451 876-10144 01
 Electrical-conduit sizing gage
 MSC-19491 876-10150 01
 Overhead tray for cable test system
 MSC-19488 876-10270 08
 Universal solar-cell terminal
 M-FS-23505 876-10450 01
 Relative stiffness of flat-conductor cable
 M-FS-23537 876-10469 01

ELECTRICAL FAULTS

- Overload-protector/fault-indicator circuit
 NPO-13592 876-10308 01
 Plug-in circuit monitor
 MSC-19455 876-10311 01
 Majority-voted logic fail-sense circuit
 NPO-13107 876-10313 01
 Time-domain reflectometry for cable-fault isolation
 KSC-10741 876-10377 06
 Paddle-pin alignment test
 KSC-10740 876-10388 06
 Pulse detector
 MSC-16268 876-10557 06

ELECTRICAL GROUNDING

- Biased-circuit digital data line receiver
 MSC-14967 876-10457 01

ELECTRICAL INSULATION

- Organic adhesives for hybrid microcircuits
 M-FS-23370 876-10014 01
 Improved Einzel lenses
 M-FS-23115 876-10032 03

- High-temperature flat-conductor cable
 M-FS-23451 876-10144 01
 Testing flat-conductor cable
 M-FS-23174 876-10151 01
 Surface mounted flat-conductor cable
 M-FS-223135 876-10152 01
 Temperature rise of installed FCC
 M-FS-23127 876-10153 01

ELECTRICAL MEASUREMENT

- Direct-reading inductance meter
 NPO-13792 876-10473 02
 Instrumentation for measuring low-level currents/voltages
 MSC-14855 876-10480 02
 Detecting contamination on a metal surface
 M-FS-19260 876-10552 06

ELECTRICAL PROPERTIES

- All-tantalum electrolytic capacitor
 M-FS-23462 876-10424 08
 Detection of surface impurities on processed metals
 MSC-19670 876-10553 06

ELECTRICAL RESISTANCE

- Resistance heating elements with specific heating profiles
 LEWIS-10719 876-10095 06

ELECTRO-OPTICS

- Two-wavelength dye laser
 LANGLEY-12012 876-10170 03
 Tunable acoustical optical filter
 NPO-13640 876-10340 03

ELECTROACOUSTIC TRANSDUCERS

- Rous system
 LANGLEY-12015 876-10215 06
 ROUS bolt-tensioning monitor
 LANGLEY-12016 876-10216 06

ELECTROCARDIOGRAPHY

- Biomedical ultrasonoscope
 ARC-10994 876-10537 05

ELECTROCHEMICAL CELLS

- Compact reconditioner for Ni/Cd cells
 M-FS-23270 876-10141 01
 Electrolyte cells measure oxygen fugacities
 MSC-16089 876-10523 04

ELECTROCHEMICAL CORROSION

- Specific-ion electrodes for measuring Ag ions
 MSC-14906 876-10068 04

ELECTROCHEMICAL MACHINING

- Electron-beam welder alignment
 MSC-19642 876-10269 08

ELECTROCHEMICAL OXIDATION

- REDOX - electrochemical energy storage
 LEWIS-12220 876-10070 04

ELECTROCHEMISTRY

- Specific-ion electrodes for measuring Ag ions
 MSC-14906 876-10068 04
 REDOX - electrochemical energy storage
 LEWIS-12220 876-10070 04
 Signal processing and display for electrochemical data
 LANGLEY-11922 876-10327 02
 Fraction collector for electrophoresis
 M-FS-23459 876-10352 04
 Purity test for copper-plating solutions
 M-FS-19298 876-10360 04
 Electrolyte cells measure oxygen fugacities
 MSC-16089 876-10523 04

ELECTRODEPOSITION

- Automatic multiple applicator electrophoresis
 ARC-10991 876-10538 05

ELECTRODES

- Ultra-high-vacuum electrical feedthrough
 HQN-10799 876-10005 01
 Improved Einzel lenses
 M-FS-23115 876-10032 03
 Specific-ion electrodes for measuring Ag ions
 MSC-14906 876-10068 04
 Metal structures with parallel pores
 GSFC-10984 876-10131 08
 Signal processing and display for electrochemical data
 LANGLEY-11922 876-10327 02
 Purity test for copper-plating solutions
 M-FS-19298 876-10360 04
 Disposable biomedical electrode
 MSC-14623 876-10363 05
 Automated EEG acquisition
 MSC-16111 876-10364 05

ELECTROENCEPHALOGRAPHY

- Disposable biomedical electrode
 MSC-14623 876-10363 05
 Automated EEG acquisition
 MSC-16111 876-10364 05
 Short-range biotelemetry system
 MSC-16011 876-10369 05

ELECTROLYSIS

- Hydrogen Energy A bibliography with abstracts
 HQN-10898 876-10189 03
 Atmosphere-generating system
 MSC-14713 876-10389 06

ELECTROLYTES

- Improved wet-slug capacitor
 LANGLEY-11720 876-10008 01

ELECTROLYTIC CELLS

- REDOX - electrochemical energy storage
 LEWIS-12220 876-10070 04
 Atmosphere-generating system
 MSC-14713 876-10389 06

ELECTROMAGNETIC ABSORPTION

- Free-space microwave-power transmission
 M-FS-23443 876-10162 02
 Differential-optoacoustic absorption detector
 NPO-13759 876-10494 03

ELECTROMAGNETIC FIELDS

- Double-focusing mass spectrometer
 NPO-13663 876-10183 03

ELECTROMAGNETIC NOISE

- Improved microbridge Josephson devices
 M-FS-23274 876-10012 01
 Wideband distribution amplifier
 NPO-13256 876-10307 01

ELECTROMAGNETIC PROPERTIES

- Time-domain reflectometry for cable-fault isolation
 KSC-10741 876-10377 06

ELECTROMAGNETIC RADIATION

- Multifrequency broadband, dual-polarized antenna
 NPO-13866 876-10464 01

ELECTROMAGNETIC SURFACE WAVES

- Dielectric covered antennas
 MSC-16186 876-10471 01

ELECTROMAGNETIC WAVE FILTERS

- Hybrid digital-analog implementation of digital filters
 NPO-11833 876-10299 01

RAM digital filter
NPO-13659 876-10316 01

ELECTROMETERS
Instrumentation for measuring low-level currents/voltages
MSC-14855 876-10480 02

ELECTROMYOGRAPHY
Short-range biotelemetry system
MSC-16011 876-10369 05

ELECTRON BEAM WELDING
Improved photochemical etching of stainless steel
MSC-19728 876-10268 08

ELECTRON BOMBARDMENT
Ultra-high-vacuum electrical feedthrough
HQN-10799 876-10005 01

ELECTRON MICROSCOPES
High-resolution electron microscope
NPO-13811 876-10499 03

ELECTRONIC CONTROL
Electronic circuits
HQN-10894 876-10156 01
Inductorless voltage multiplier/converter
NPO-13757 876-10445 01

ELECTRONIC EQUIPMENT
Fluorescent-lamp power supply
MSC-14900 876-10140 01
Charge-sensitive amplifier with notched frequency response
LANGLEY-11317 876-10440 01
Improved shelf for electronic modules
NPO-13158 876-10578 07

ELECTRONIC FILTERS
Band-elimination filter
M-FS-23303 876-10295 01
Charge-sensitive amplifier with notched frequency response
LANGLEY-11317 876-10440 01
Open-loop digital frequency multiplier
MSC-12709 876-10447 01

ELECTRONIC MODULES
Modular design of high frequency circuits
M-FS-23408 876-10139 01
Microprogrammable module
MSC-19456 876-10312 01

ELECTRONIC PACKAGING
Modular design of high frequency circuits
M-FS-23408 876-10139 01
Guidelines for multiple LSI packaging
M-FS-23367 876-10159 01
Multiple-layer printed-wiring trace connector
LANGLEY-11709 876-10305 01
Microprogrammable module
MSC-19456 876-10312 01
Mask analysis program
M-FS-23431 876-10318 01
Improved shelf for electronic modules
NPO-13158 876-10578 07
Parylene coating for circuit components
M-FS-23450 876-10583 08

ELECTRONIC TRANSDUCERS
Capacitive shaft-angle encoder
ARC-10897 876-10386 06
Miniature-angular-position transducer
LANGLEY-11999 876-10555 06

ELECTROPHORESIS
Fraction collector for electrophoresis
M-FS-23459 876-10352 04
Automatic multiple applicator electrophoresis
ARC-10991 876-10538 05

ELECTROPLATING
Purity test for copper-plating solutions
M-FS-19298 876-10360 04
Automatic multiple applicator electrophoresis
ARC-10991 876-10538 05

ELECTRORETINOGRAPHY
Disposable biomedical electrode
MSC-14623 876-10363 05

ELECTROSTATIC CHARGE
Electrostatic analysis of charge-coupled structures
M-FS-23507 876-10472 01
Electrostatic-discharge ignition
NPO-13798 876-10487 03
Elastrostatic-discharge damage to semiconductors
LANGLEY-11739 876-10586 08

ELEVATORS (LIFTS)
Cable-load equalization system
MSC-17494 876-10230 06

ELLIPSOMETERS
Ellipsometer for measurement in ultrahigh vacuum
M-FS-23130 876-10035 03

ELLIPTIC DIFFERENTIAL EQUATIONS
COMOC a finite-element algorithm for the Navier-Stokes equations
LANGLEY-11480 876-10241 06

ELUTION
Fraction collector for electrophoresis
M-FS-23459 876-10352 04

EMERGENCY LIFE SUSTAINING SYSTEMS
Miniature emergency oxygen unit
KSC-11011 876-10539 05

EMISSION
Ultra-high-vacuum electrical feedthrough
HQN-10799 876-10005 01

EMISSION SPECTRA
Determination of trace amounts of POF3
LEWIS-10577 876-10356 04

ENAMELS
Enamel for high-temperature superalloys
M-FS-22804 876-10358 04

ENCAPSULATING
Transparent and flame-retardant potting compounds
MSC-14669 876-10066 04
Removal of encapsulating materials
GSFC-11696 876-10143 01
Reduced costs for solar-cell modules
LEWIS-12185 876-10427 08
Thick-film preamplifier
NPO-13416 876-10459 01
Parylene coating for circuit components
M-FS-23450 876-10583 08

ENERGY ABSORPTION
Fluid-film bearing damper
LEWIS-11158 876-10378 06
Low-onset-rate energy absorber
MSC-12279 876-10385 06
Energy-absorbing attenuator
MSC-17473 876-10419 07
Energy conversion system
NPO-13510 876-10485 03

ENERGY ABSORPTION FILMS
Solar selective surfaces
LEWIS-12614 876-10047 03
JPL solar power experiments
NPO-13461 876-10098 06
Coating for solar panels
M-FS-23420 876-10196 04

ENERGY CONSERVATION
Catalysts for low-energy aldehyde processes
NPO-13827 876-10519 04

ENERGY CONSUMPTION
NECAP NASA Energy-cost analysis program
LANGLEY-11888 876-10239 06

ENERGY CONVERSION
NECAP NASA Energy-cost analysis program
LANGLEY-11888 876-10239 06
Proposed low-temperature solar engine
M-FS-23403 876-10254 07
Energy conversion system
NPO-13510 876-10485 03

ENERGY CONVERSION EFFICIENCY
Battery-cell thermal test facility
M-FS-23040 876-10124 08
Feedback arrangement for regenerative switches
NPO-13060 876-10302 01

ENERGY DISSIPATION
Energy-absorbing attenuator
MSC-17473 876-10419 07

ENERGY REQUIREMENTS
ESOP Version IV Energy systems optimization program
MSC-14854 876-10106 06
SESOP Program for solar-energy heating-systems analysis
MSC-14853 876-10113 06
NECAP NASA Energy-cost analysis program
LANGLEY-11888 876-10239 06

ENERGY SOURCES
Solar thermal energy utilization A bibliography with abstracts
HQN-10900 876-10186 03

ENERGY STORAGE
REDOX - electrochemical energy storage
LEWIS-12220 876-10070 04

ENERGY TRANSFER
NECAP NASA Energy-cost analysis program
LANGLEY-11888 876-10239 06
Energy conversion system
NPO-13510 876-10485 03

ENGINE ANALYZERS
DYNGEN
LEWIS-12506 876-10108 06

ENGINE NOISE
Noise suppressor for turbofan-jet engines
ARC-10812 876-10375 06

ENGINES
Improved automobile gas turbine engine
LEWIS-12521 876-10115 07
Proposed low-temperature solar engine
M-FS-23403 876-10254 07

ENVIRONMENTAL PROTECTION
Catalytic oxidation of waste materials
MSC-14831 876-10354 04

ENVIRONMENTAL ENGINEERING
Solar heating and cooling performance
M-FS-23432 876-10235 06
NASA technology utilization house
LANGLEY-12134 876-10570 07

ENVIRONMENTAL QUALITY
Contamination monitoring of fluids
KSC-11037 876-10382 06
Extracting lignins from mill wastes
NPO-13847 876-10514 04

ENVIRONMENTAL SURVEYS

Remote sensing of vegetation and soil
GSFC-11976 B76-10490 03

ENVIRONMENTAL TESTS

Mechanical loader for testing
composites
LEWIS-12432 B76-10548 06
Pulse detector
MSC-16268 B76-10557 06

ENZYMES

Extraction of urea and ammonium ion
ARC-11064 B76-10515 04

EPHEMERIDES

Development ephemeris number 96
NPO-14002 B76-10507 03
Independent trajectory determination
system
GSFC-11923 B76-10569 06

EPHEMERIS TIME

SANDTRACKS World map and stations
predictions computer programs
GSFC-12099 B76-10190 03

EPITAXY

Epitaxial growth of Ga1-xAlxAs on GaP
GSFC-11826 B76-10261 08
Semiconductor ohmic contact
LANGLEY-11691 B76-10461 01

EPOXY COMPOUNDS

Specific-ion electrodes for measuring Ag
ions
MSC-14906 B76-10068 04

EPOXY RESINS

Polymer adhesives for hybrid circuits
M-FS-23287 B76-10015 01
Solventless intumescent coatings
ARC-10996 B76-10194 04
Low-pressure low-temperature molding
process
MSC-19778 B76-10425 08
New diamine hardeners for epoxies
LANGLEY-11823 B76-10522 04
Aluminum transfer method for plating
plastics
MSC-16221 B76-10593 08

EQUATIONS OF MOTION

Determining aircraft stability and control
derivatives
FRC-10109 B76-10402 06

EQUATIONS OF STATE

Processing equations for state-space
models
LEWIS-12555 B76-10438 09

EQUIPMENT

Input/output error analyzer
GSFC-12132 B76-10610 09

ERROR ANALYSIS

Guide for testing numerical-integration
subroutines
NPO-11644 B76-10135 09

ERROR CORRECTING CODES

Concatenated algebraic decoder
MSC-14058 B76-10325 02
Interleaved cyclic codes
KSC-11040 B76-10435 09

ERROR CORRECTING DEVICES

Stepping optical path difference in an
interferometer
NPO-13569 B76-10033 03
Servo corrects interferometer-mirror tilt
NPO-13687 B76-10502 03

ERROR DETECTION CODES

Microprogramming for real-time data
acquisition
KSC-11027 B76-10328 02
Serial-data correlator/code translator
KSC-11025 B76-10454 01

Code-usage analysis system

MSC-16214 B76-10603 09
FORTRAN code-evaluation system
M-FS-23539 B76-10604 09

ERROR SIGNALS

Stepping optical path difference in an
interferometer
NPO-13569 B76-10033 03

ERRORS

Input/output error analyzer
GSFC-12132 B76-10610 09

ESCAPE SYSTEMS

Improved road handler
M-FS-23233 B76-10413 07

ETCHING

Electron-beam welder alignment
MSC-19642 B76-10269 08
Elimination of color rings on film
negatives
GSFC-12110 B76-10498 03
Crystal orientation for solid-state
photolithography
LANGLEY-11940 B76-10582 08

ETHYL ALCOHOL

Stripper for silicone polymers
MSC-19380 B76-10267 08

EULER EQUATIONS OF MOTION

Analytic numerical solutions for shock
waves
ARC-10959 B76-10096 06

EUTECTIC ALLOYS

Growing crystals from eutectic melts
M-FS-22926 B76-10202 04
Determining eutectic composition in
metal alloys
LEWIS-12633 B76-10520 04

EUTECTICS

Determining eutectic composition in
metal alloys
LEWIS-12633 B76-10520 04

EVAPORATIVE COOLING

Sublimator/evaporator heat sink
ARC-10912 B76-10384 06

EVAPORATORS

Integral fan/water separator
MSC-14756 B76-10119 07

EXHAUST NOZZLES

REJECT
LEWIS-12375 B76-10110 06
Noise suppressor for turbofan-jet
engines
ARC-10812 B76-10375 06

EXHAUST SYSTEMS

Conical diffuser for fuel cells
MSC-14026 B76-10255 07

EXPLOSIVE WELDING

Simplified explosive-weld evaluation
MSC-14654 B76-10228 06
Polishing gold and gold-alloy crystals
M-FS-22800 B76-10263 08
Explosive-seam welding seals large
pressure vessels
LANGLEY-12132 B76-10588 08

EXTENSOMETERS

Laser extensometer
M-FS-19259 B76-10030 03

EXTRACTION

DIP extractor simplifies circuit removal
MSC-12712 B76-10002 01
Integral fan/water separator
MSC-14756 B76-10119 07
Fraction collector for electrophoresis
M-FS-23459 B76-10352 04

EXTREMUM VALUES

Peak-acceleration limiter
NPO-11940 B76-10082 06

EXTRUDING

Metal structures with parallel pores
GSFC-10984 B76-10131 08
Metalworking method for composites
M-FS-23354 B76-10132 08
Manufacture of flat-conductor cable
M-FS-23121 B76-10155 01

F**FABRICATION**

Polymer adhesives for hybrid circuits
M-FS-23287 B76-10015 01
Lightweight orthotic appliances
LANGLEY-11918 B76-10076 05
Metal structures with parallel pores
GSFC-10984 B76-10131 08
Transistor-to-substrate bond quality
M-FS-21931 B76-10137 01
Solid-state particle detectors
GSFC-11785 B76-10142 01
Connector contact-ring bus
MSC-19480 B76-10146 01
Flat-conductor cable baseboard
M-FS-23141 B76-10154 01
Manufacture of flat-conductor cable
M-FS-23121 B76-10155 01
Installation of surface-mounted
flat-conductor cable
M-FS-23266 B76-10158 01
IGFET/SOI fabrication method
M-FS-23312 B76-10259 08
Epitaxial growth of Ga1-xAlxAs on GaP
GSFC-11826 B76-10261 08
Method of removing drilling chips
M-FS-19235 B76-10262 08
3-D foam adhesive deposition
M-FS-22739 B76-10271 08
Ablative-filled honeycomb composites
LANGLEY-11180 B76-10273 08
Borosilicate glass-to-Kovar tube
bonding
GSFC-12077 B76-10278 08
Technique for joining metal tubing
ARC-10946 B76-10279 08
Annealing strained alloy 718
M-FS-19242 B76-10284 08

FABRY-PEROT INTERFEROMETERS

Precision measurement of changes in
physical dimensions
M-FS-23527 B76-10543 06

FACSIMILE COMMUNICATION

Binary/BCD-to-ASCII data converter
GSFC-12044 B76-10322 02

FAIL-SAFE SYSTEMS

Fail-safe hydraulic shaker protection
NPO-13726 B76-10218 06
Majority-voted logic fail-sense circuit
NPO-13107 B76-10313 01
Safety brake for tape reels
GSFC-11960 B76-10412 07

FAILURE

Overload-protector/fault-indicator circuit
NPO-13592 B76-10308 01
Plug-in circuit monitor
MSC-19455 B76-10311 01

FAILURE ANALYSIS

Pump failure monitor
M-FS-23366 B76-10219 06
Prevention of design flaws in
multicomputer systems
MSC-14920 B76-10330 02

FAILURE MODES

Ultra-lightweight pressure vessels
MSC-14983 B76-10266 08

FASTENERS

- Large-diameter fasteners of CRES alloy
MSC-19313 876-10250 07
- Electrical-splicing connector
M-FS-24254 876-10300 01
- Astronautic structures manual
M-FS-23547 876-10393 06
- Door latch with through-access hole
MSC-19634 876-10414 07
- Controlled linear clasper/loader
GSFC-12105 876-10432 08
- Transducer bonding kit
MSC-19690 876-10587 08

FATIGUE (MATERIALS)

- Analysis of bonded joints
LANGLEY-11871 876-10231 06
- Crack-growth analysis
M-FS-23320 876-10243 06
- Fracture mechanics for weld acceptance
M-FS-23360 876-10282 08
- Astronautic structures manual
M-FS-23547 876-10393 06

FATIGUE LIFE

- Fatigue life of spur and helical gear sets
LEWIS-12596 876-10224 06

FATIGUE TESTS

- Fracture mechanics for weld acceptance
M-FS-23360 876-10282 08

FEEDBACK CIRCUITS

- M-ary shift register
NPO-11868 876-10011 01
- Demodulator aids synchronization
NPO-13605 876-10164 02
- A nonsaturating dc-to-dc parallel power converter
GSFC-12047 876-10290 01
- Rocking-motion sensor for the blind
MSC-14805 876-10366 05

FEEDBACK CONTROL

- M-ary shift register
NPO-11868 876-10011 01
- Stepping optical path difference in an interferometer
NPO-13569 876-10033 03
- Stabilized Nd YAG laser output
GSFC-11571 876-10335 03
- Control system design
LEWIS-12556 876-10404 06

FEEDERS

- Propellant side feed
LANGLEY-11082 876-10094 06

FERROFLUIDS

- Air-suspended dynamometer table
NPO-13794 876-10376 06

FERROMAGNETIC FILMS

- Triple-layer bubble-domain film
LANGLEY-11755 876-10006 01

FERROMAGNETISM

- Analog data recording on MnBi film
NPO-13302 876-10175 03
- Simplified cut-core inductor
NPO-13600 876-10317 01

FERROUS METALS

- Large-diameter fasteners of CRES alloy
MSC-19313 876-10250 07

FIBER OPTICS

- Improved collimator for imaging system
M-FS-22863 876-10038 03
- Optical bias assembly
MSC-14412 876-10051 03
- Vidicon intensifier
NPO-19112 876-10054 03
- Low-light-level integrating video system
M-FS-23288 876-10347 03

FIBER ORIENTATION

- Composite laminate warpage
LEWIS-12615 876-10355 04

FIBERS

- Flexible-pile thermal sealant
MSC-19568 876-10371 06

FIELD EFFECT TRANSISTORS

- IGFET/SOI fabrication method
M-FS-23312 876-10259 08
- Elastrostatic-discharge damage to semiconductors
LANGLEY-11739 876-10586 08

FILE MAINTENANCE (COMPUTERS)

- Business capabilities file
NPO-13834 876-10136 09
- Data-management and information system
NPO-13716 876-10602 09
- Information retrieval and display system
M-FS-23510 876-10606 09

FILM COOLING

- Noncontaminating method for visualizing gas flow
LEWIS-12076 876-10088 06

FILM THICKNESS

- Analog data recording on MnBi film
NPO-13302 876-10175 03
- Detecting contamination on a metal surface
M-FS-19260 876-10552 06

FILMS

- Abrasion-resistant coatings for plastic surfaces
ARC-10915 876-10201 04

FILTERS

- Pinhole diffraction filter
GSFC-12120 876-10333 03

FINNED BODIES

- Spin-rate control device
ARC-10884 876-10417 07
- Heat-transfer coefficients of pin-finned cylinders
LEWIS-12557 876-10554 06

FINS

- Hand fin for swimming
M-FS-21632 876-10122 07

FIRE FIGHTING

- Automatic fire/weather data station
ARC-10993 876-10160 02

FIRE PREVENTION

- Ultraviolet fire detector
M-FS-21577 876-10016 02
- Experimental data for new fire-retardant materials
MSC-16022 876-10361 04

FIREPROOFING

- Transparent and flame-retardant potting compounds
MSC-14669 876-10066 04
- Flame-resistant elastomeric polymers
MSC-16078 876-10357 04
- Experimental data for new fire-retardant materials
MSC-16022 876-10361 04

FIRST AID

- Physician's modern 'Black Bag'
MSC-14936 876-10212 05
- Multiposition rescue litter
MSC-16148 876-10368 05
- Interlocking butterfly tourniquet
MSC-19382 876-10532 05
- Miniature emergency oxygen unit
KSC-11011 876-10539 05

FITTINGS

- Tool removes brazed fittings
LANGLEY-10944 876-10244 07

- Flexible fitting for fluid lines
MSC-17780 876-10277 08
- Soft seat A-N fitting for vacuum use
LEWIS-10130 876-10408 07

FIXTURES

- Method of removing drilling chips
M-FS-19235 876-10262 08
- Modular multipurpose panel support
MSC-19641 876-10421 08
- Flange weld pressure testing
M-FS-19292 876-10546 06

FLAME RETARDANTS

- Flame-resistant elastomeric polymers
MSC-16078 876-10357 04
- Flexible-pile thermal sealant
MSC-19568 876-10371 06

FLAT CONDUCTORS

- High-temperature flat-conductor cable
M-FS-23451 876-10144 01
- Testing flat-conductor cable
M-FS-23174 876-10151 01
- Surface mounted flat-conductor cable
M-FS-223135 876-10152 01
- Temperature rise of installed FCC
M-FS-23127 876-10153 01
- Flat-conductor cable baseboard
M-FS-23141 876-10154 01
- Manufacture of flat-conductor cable
M-FS-23121 876-10155 01
- Installation of surface-mounted flat-conductor cable
M-FS-23266 876-10158 01
- Microprogramable module
MSC-19456 876-10312 01
- Relative stiffness of flat-conductor cable
M-FS-23537 876-10469 01

FLAT PLATES

- Outer flow and turbulence in boundary layers
M-FS-23286 876-10100 06

FLEXIBILITY

- Relative stiffness of flat-conductor cable
M-FS-23537 876-10469 01

FLIGHT ALTITUDE

- Low-cost pressure-data encoder
NPO-13692 876-10303 01

FLIGHT HAZARDS

- Experimental data for new fire-retardant materials
MSC-16022 876-10361 04

FLIGHT MECHANICS

- Estimating aircraft states
ARC-10969 876-10567 06
- Stability of an elastic airplane
ARC-11086 876-10568 06

FLIGHT SIMULATION

- Multiplane binocular visual display system
ARC-10808 876-10168 02

FLIGHT SIMULATORS

- Full-color hybrid display
ARC-10903 876-10477 02

FLIGHT TRAINING

- Multiplane binocular visual display system
ARC-10808 876-10168 02

FLOOD PLAINS

- Data system for multiplexed water-current meters
M-FS-23343 876-10493 03

FLOW CHARACTERISTICS

- Predicting off-design performance of radial-inflow turbines
LEWIS-12500 876-10242 06

- Integral-matrix procedure for
boundary-layer problems
M-FS-23348 876-10608 09
- FLOW DIRECTION INDICATORS**
Velocity sensor for slow flows
LANGLEY-11785 876-10380 06
- FLOW DISTRIBUTION**
REJECT
LEWIS-12375 876-10110 06
Shock interference patterns and heating
LANGLEY-11497 876-10240 06
Conical diffuser for fuel cells
MSC-14026 876-10255 07
- FLOW GEOMETRY**
Design analysis of radial-inflow turbines
LEWIS-12684 876-10561 06
- FLOW MEASUREMENT**
Introducing controlled matter into a fluid
system
M-FS-24309 876-10093 06
All-nickel hot-wire probe
ARC-10911 876-10379 06
Velocity sensor for slow flows
LANGLEY-11785 876-10380 06
Automated secondary standard for liquid
flowmeters
LEWIS-12695 876-10544 06
- FLOW REGULATORS**
Firefighter's breathing system
MSC-14733 876-10208 05
- FLOW THEORY**
COMOC a finite-element algorithm for
the Navier-Stokes equations
LANGLEY-11480 876-10241 06
- FLOW VELOCITY**
Velocity sensor for slow flows
LANGLEY-11785 876-10380 06
- FLOWMETERS**
Constant-rate fluid-delivery system
MSC-14905 876-10214 06
Data system for multiplexed
water-current meters
M-FS-23343 876-10493 03
Automated secondary standard for liquid
flowmeters
LEWIS-12695 876-10544 06
- FLUID DYNAMICS**
Noncontaminating method for visualizing
gas flow
LEWIS-12076 876-10088 06
Outer flow and turbulence in boundary
layers
M-FS-23286 876-10100 06
Hot-wire probe
ARC-10900 876-10222 06
Contamination monitoring of fluids
KSC-11037 876-10382 06
Integral-matrix procedure for
boundary-layer problems
M-FS-23348 876-10608 09
- FLUID FILMS**
Fluid-film bearing damper
LEWIS-11158 876-10378 06
- FLUID FILTERS**
Automated solvent concentrator
NPO-13068 876-10198 04
Precolumn for extract concentration
NPO-13083 876-10199 04
Fluid handling equipment
HQN-10890 876-10232 06
- FLUID FLOW**
Noncontaminating method for visualizing
gas flow
LEWIS-12076 876-10088 06
Introducing controlled matter into a fluid
system
M-FS-24309 876-10093 06
- Constant-rate fluid-delivery system
MSC-14905 876-10214 06
Fluid handling equipment
HQN-10890 876-10232 06
Impedance of curved ducts
LEWIS-12636 876-10237 06
Transient thermal analysis of fluid
systems
MSC-19502 876-10401 06
Rapid kinetics
LANGLEY-12140 876-10529 04
Automated secondary standard for liquid
flowmeters
LEWIS-12695 876-10544 06
Dispensing a measured quantity of a
liquid
M-FS-21163 876-10574 07
- FLUID INJECTION**
Introducing controlled matter into a fluid
system
M-FS-24309 876-10093 06
- FLUID MECHANICS**
Constant-rate fluid-delivery system
MSC-14905 876-10214 06
Shock interference patterns and heating
LANGLEY-11497 876-10240 06
COMOC a finite-element algorithm for
the Navier-Stokes equations
LANGLEY-11480 876-10241 06
Hydrodynamic lubrication of face seals
LEWIS-12710 876-10558 06
- FLUID TRANSMISSION LINES**
Frozen-fluid line repair
MSC-19132 876-10227 06
Flexible fitting for fluid lines
MSC-17780 876-10277 06
- FLUIDIC CIRCUITS**
Vapor/liquid interface sensor
MSC-12474 876-10220 06
- FLUIDICS**
Frozen-fluid line repair
MSC-19132 876-10227 06
- FLUORESCENCE**
Inexpensive portable drug detector
ARC-10633 876-10534 05
- FLUORINE ORGANIC COMPOUNDS**
Flame-resistant elastomeric polymers
MSC-16078 876-10357 04
- FLUORO COMPOUNDS**
High-temperature flat-conductor cable
M-FS-23451 876-10144 01
- FLUOROHYDROCARBONS**
Antireflection coating for plastic lenses
ARC-10983 876-10591 08
- FLUSHING**
Cleaning large tanks and gas bottles
MSC-14966 876-10430 09
- FLUX DENSITY**
Analog data recording on MnBi film
NPO-13302 876-10175 03
- FLUXES**
Braze/Rebraze process for CRES steel
MSC-19600 876-10280 08
- FLYING SPOT SCANNERS**
Remote, unattended forest fire
detector
M-FS-21221 876-10077 05
- FM/PM (MODULATION)**
Tracking a phase-shift-keyed signal
MSC-16170 876-10481 02
- FOAMS**
Polymeric foams stable at high
temperatures
ARC-11008 876-10065 04
Thermal/acoustical insulation foam
MSC-14795 876-10195 04
- 3-D foam adhesive deposition
M-FS-22739 876-10271 08
Flame-resistant elastomeric polymers
MSC-16078 876-10357 04
Viscoelastic foam cushion
ARC-11089 876-10525 04
Mixing ingredients in foam dispenser
M-FS-20607 876-10592 08
- FOCUSING**
Contrast enhancement of transparencies
GSFC-11989 876-10181 03
- FOLDING STRUCTURES**
Multiposition rescue litter
MSC-16148 876-10368 05
- FORECASTING**
Estimation of spares
MSC-19469 876-10133 09
- FOREST FIRE DETECTION**
Ultraviolet fire detector
M-FS-21577 876-10016 02
Remote unattended, forest fire detector
M-FS-21221 876-10077 05
- FOREST FIRES**
Remote moisture-content balance
ARC-11032 876-10492 03
- FORMING TECHNIQUES**
Low-cost solar reflectors
NPO-13707 876-10123 08
Roll-forming tubes to header plates
LEWIS-10513 876-10130 08
Age-forming aluminum panels
MSC-12648 876-10281 08
Forming hard aluminum in complex
shapes
MSC-19693 876-10579 08
- FORMULAS (MATHEMATICS)**
Field distribution in a thin lens
LANGLEY-11392 876-10179 03
- FORTRAN**
Meta-assembler
M-FS-23449 876-10437 09
- FORWARD SCATTERING**
A forward-scatter polarimeter for
chemical analysis
NPO-13756 876-10334 03
Dual-purpose holocamera
LEWIS-12166 876-10505 03
- FOSSIL FUELS**
Stopping small liquid leaks
KSC-10667 876-10126 08
Hydrogen Energy A bibliography with
abstracts
HQN-10898 876-10189 03
- FOURIER ANALYSIS**
Time-domain aircraft model
MSC-16018 876-10391 06
Transfer-function parameters
LEWIS-12612 876-10605 09
Systems improved numerical differencing
analyzer
MSC-13805 876-10609 09
- FRACTURE MECHANICS**
Astronautic structures manual
M-FS-23547 876-10393 06
- FRACTURE STRENGTH**
Ultrasonic measurement of fracture
toughness
LEWIS-12642 876-10372 06
Yield-pressure determination
MSC-14655 876-10581 08
- FRAUNHOFER LINES**
Spatially-coherent coupled
semiconductor lasers
M-FS-23396 876-10500 03

FREE CONVECTION

Transient thermal analysis of fluid systems

MSC-19502 876-10401 06

FREE FLOW

MINIVER Miniature version of real/ideal gas aero-heating and ablation computer program

M-FS-21951 876-10105 06

FREE RADICALS

Chemiluminescent prediction of service life

MSC-16010 876-10191 04

FREEZING

Frozen-fluid line repair

MSC-19132 876-10227 06

FREIGHT COSTS

DORCA II Dynamic operations requirements and cost analysis program

HQN-10834 876-10289 09

FREQUENCY CONTROL

Band-elimination filter

M-FS-23303 876-10295 01

Digital varying-frequency generator

MSC-16331 876-10446 01

Open-loop digital frequency multiplier

MSC-12709 876-10447 01

FREQUENCY MODULATION

Digital varying-frequency generator

MSC-16331 876-10446 01

FREQUENCY MULTIPLIERS

Open-loop digital frequency multiplier

MSC-12709 876-10447 01

FREQUENCY STABILITY

Wideband distribution amplifier

NPO-13256 876-10307 01

Stabilized Nd YAG laser output

GSFC-11571 876-10335 03

FREQUENCY SYNTHESIZERS

Doppler extraction with a digital VCO

MSC-14814 876-10452 01

FROGS

Extraction of urea and ammonium ion

ARC-11064 876-10515 04

FROZEN FOODS

Meal system for the elderly

MSC-16062 876-10530 05

FUEL CELLS

REDOX - electrochemical energy storage

LEWIS-12220 876-10070 04

Conical diffuser for fuel cells

MSC-14026 876-10255 07

Fuel-cell powerplant insulation

MSC-16012 876-10426 08

Energy conversion system

NPO-13510 876-10485 03

FUEL CONTROL

AC adapter for fuel-flow sensor

GSFC-12037 876-10387 06

FUEL GAGES

AC adapter for fuel-flow sensor

GSFC-12037 876-10387 06

FUEL OILS

AC adapter for fuel-flow sensor

GSFC-12037 876-10387 06

FUEL SYSTEMS

Conical diffuser for fuel cells

MSC-14026 876-10255 07

FUEL TESTS

Determining total carbon in hydrazine

KSC-11022 876-10521 04

FUEL VALVES

Long-life ball-valve design

M-FS-19282 876-10576 07

FUEL-AIR RATIO

Sustained-arc ignition system

LEWIS-12444 876-10410 07

Electrostatic-discharge ignition

NPO-13798 876-10487 03

FUNCTIONS (MATHEMATICS)

Curvilinear bicubic-spline-fit

interpolation

LANGLEY-11391 876-10434 09

Transfer-function parameters

LEWIS-12612 876-10605 09

FURNACES

Improved high-temperature heater with stabilized-zirconia elements

M-FS-23351 876-10221 06

G**GALLIUM ARSENIDE LASERS**

Determination of radiative current in

LED s

GSFC-12034 876-10042 03

Combined GaAs laser outputs

M-FS-23397 876-10173 03

Semiconductor ohmic contact

LANGLEY-11691 876-10461 01

Spatially-coherent coupled

semiconductor lasers

M-FS-23396 876-10500 03

GALLIUM ARSENIDES

Low-threshold light-emitting-diode laser

LANGLEY-11477 876-10176 03

Epitaxial growth of Ga1-xAlxAs on GaP

GSFC-11826 876-10261 08

GALLIUM PHOSPHIDES

Epitaxial growth of Ga1-xAlxAs on GaP

GSFC-11826 876-10261 08

GARBAGE

Manual trash compactor

MSC-16039 876-10390 06

GARNETS

Triple-layer bubble-domain film

LANGLEY-11755 876-10006 01

GAS ANALYSIS

Field sampling fine-vacuum system

KSC-10596 876-10118 07

Signal processing and display for

electrochemical data

LANGLEY-11922 876-10327 02

A forward-scatter polarimeter for

chemical analysis

NPO-13756 876-10334 03

Remote water-monitoring system

LANGLEY-11973 876-10365 05

Measuring trace dispersants in gas

streams

ARC-10896 876-10374 06

Improved gas-pressure transducer

ARC-10639 876-10381 06

Low-pressure-gas sampling pump

ARC-10941 876-10573 07

GAS CHROMATOGRAPHY

Automated solvent concentrator

NPO-13068 876-10198 04

Fraction-storage unit for

drug-identification system

NPO-13111 876-10200 04

Separation of water from air samples

ARC-10890 876-10205 04

GAS COOLING

Noncontaminating method for visualizing

gas flow

LEWIS-12076 876-10088 06

GAS DENSITY

A forward-scatter polarimeter for

chemical analysis

NPO-13756 876-10334 03

Improved gas-pressure transducer

ARC-10639 876-10381 06

GAS DETECTORS

Hydrogen chloride test set

M-FS-23357 876-10063 04

GAS DYNAMICS

Noncontaminating method for visualizing

gas flow

LEWIS-12076 876-10088 06

Impedance of curved ducts

LEWIS-12636 876-10237 06

Rapid kinetics

LANGLEY-12140 876-10529 04

GAS FLOW

Noncontaminating method for visualizing

gas flow

LEWIS-12076 876-10088 06

Joule-Thomson data curves

KSC-10538 876-10102 06

Venting for condensation in gas lines

MSC-19621 876-10109 06

Measuring trace dispersants in gas

streams

ARC-10896 876-10374 06

Velocity sensor for slow flows

LANGLEY-11785 876-10380 06

Rapid kinetics

LANGLEY-12140 876-10529 04

GAS IONIZATION

Spatial filter for Q-switched laser

LEWIS-12164 876-10501 03

GAS LASERS

Efficient copper-vapor pulsed laser

NPO-13449 876-10341 03

Spatial filter for Q-switched laser

LEWIS-12164 876-10501 03

GAS MIXTURES

Multispecies transient simulator

MSC-14862 876-10527 04

Rapid kinetics

LANGLEY-12140 876-10529 04

GAS PRESSURE

Gas boost compressor

MSC-14757 876-10415 07

GAS SPECTROSCOPY

Borosilicate glass-to-Kovar tube

bonding

GSFC-12077 876-10278 08

GAS STREAMS

Integral-matrix procedure for

boundary-layer problems

M-FS-23348 876-10608 09

GAS TURBINE ENGINES

Improved automobile gas turbine

engine

LEWIS-12521 876-10115 07

Design analysis of radial-inflow turbines

LEWIS-12684 876-10561 06

GAS TURBINES

Improved automobile gas turbine

engine

LEWIS-12521 876-10115 07

GAS VALVES

Firefighter's breathing system

MSC-14733 876-10208 05

GASES

Field sampling fine-vacuum system

KSC-10596 876-10118 07

GASKETS

Split-ring seal

MSC-14304 876-10247 07

Fundamentals of fluid sealing

LEWIS-12683 876-10392 06

GATES (CIRCUITS)

- Signal level detector
NPO-13272 876-10310 01
Solid-state RF switch
NPO-13081 876-10315 01

GEARS

- Fatigue life of spur and helical gear sets
LEWIS-12596 876-10224 06

GEODETIC COORDINATES

- GEODYN Orbital and geodetic parameter estimation
GSFC-12014 876-10396 06
Geodetic control net
NPO-13718 876-10510 03

GEODETIC SATELLITES

- Geodetic control net
NPO-13718 876-10510 03

GEOPHYSICS

- GEODYN Orbital and geodetic parameter estimation
GSFC-12014 876-10396 06

GEOTHERMAL RESOURCES

- Remote sensing of natural resources
HQN-10899 876-10238 06
Economical solar-heating for homes
LANGLEY-12135 876-10571 07

GERIATRICS

- Meal system for the elderly
MSC-16062 876-10530 05

GERONTOLOGY

- Meal system for the elderly
MSC-16062 876-10530 05

GLANDS (SEALS)

- Split-ring seal
MSC-14304 876-10247 07

GLASS

- Low-cost solar reflectors
NPO-13707 876-10123 08

GLASSWARE

- Leak testing glass ampoules
LANGLEY-11988 876-10551 06

GOLD

- Soldering high-impedance Nichrome wire
M-FS-1457 876-10264 08

GOLD ALLOYS

- Soldering high-impedance Nichrome wire
M-FS-1457 876-10264 08

GONIOMETERS

- Capacitive shaft-angle encoder
ARC-10897 876-10386 06

GRAPHITE

- Lightweight orthotic appliances
LANGLEY-11918 876-10076 05
Second-generation PMR polyimides
LEWIS-12738 876-10359 04

GRAPHS (CHARTS)

- Graphical methods for variable sampling plans
MSC-19279 876-10431 08
Oblique orthographic projections and contour plots
LANGLEY-11877 876-10601 09

GRATINGS (SPECTRA)

- Holography with surface plasma waves
M-FS-22040 876-10039 03

GROOVING

- Rotary broaches
M-FS-23374 876-10248 07

GROUND EFFECT MACHINES

- Air-cushion landing systems
LANGLEY-11783 876-10397 06

GROUND HANDLING

- Omnidirectional wheel
M-FS-21309 876-10575 07

GROUND STATIONS

- All-weather ice information system
LEWIS-12638 876-10018 02

GROUND SUPPORT EQUIPMENT

- Jet engine stator-blade removal tool
MSC-16000 876-10420 07

GROUND WIND

- Crosswind landing-gear position indicator
LANGLEY-11941 876-10120 07

GROUP VELOCITY

- Effects of mismatch on group delay of microwave transmission
NPO-13863 876-10478 02

GUARDS (SHIELDS)

- Increased safety in mercury-containing devices
M-FS-23308 876-10013 01

GUIDANCE SENSORS

- Infrared range sensor
ARC-10885 876-10475 02

GUST ALLEVIATORS

- Gust alleviation for STOL aircraft
LANGLEY-11413 876-10099 06

H**H WAVES**

- Multifrequency broadband, dual-polarized antenna
NPO-13866 876-10464 01

HANDLING EQUIPMENT

- Aseptic fluid-transfer system
NPO-13743 876-10210 05

HARDENERS

- New diamine hardeners for epoxies
LANGLEY-11823 876-10522 04

HARDENING (MATERIALS)

- Forming hard aluminum in complex shapes
MSC-19693 876-10579 08
Electric heating for metal surface hardening
M-FS-19268 876-10580 08

HARDWARE

- Nondestructive interior examination of moving parts
M-FS-23378 876-10545 06

HARMONIC MOTION

- Effects of mismatch on group delay of microwave transmission
NPO-13863 876-10478 02

HARNESSES

- Firefighter's breathing system
MSC-14733 876-10208 05

HAZARDS

- Safety organizations and experts
LEWIS-12742 876-10598 09

HEAD MOVEMENT

- Measuring mandibular motions
ARC-10956 876-10362 05

HEART

- Myocardial wall-thickness transducer
NPO-13644 876-10075 05

HEAT BUDGET

- NECAP NASA Energy-cost analysis program
LANGLEY-11888 876-10239 06

HEAT EXCHANGERS

- Self-contained constant-temperature heat absorber
M-FS-22989 876-10091 06
Sublimator/evaporator heat sink
ARC-10912 876-10384 06

- Heat-transfer coefficients of pin-finned cylinders
LEWIS-12557 876-10554 06

HEAT FLUX

- Measurement of rapidly-changing heating rates
LANGLEY-11380 876-10097 06
Self-calibrating radiometer
ARC-10811 876-10339 03

HEAT GENERATION

- Resistance heating elements with specific heating profiles
LEWIS-10719 876-10095 06
Solar thermal energy utilization A bibliography with abstracts
HQN-10900 876-10186 03
Economical solar-heating for homes
LANGLEY-12135 876-10571 07

HEAT MEASUREMENT

- Measurement of rapidly-changing heating rates
LANGLEY-11380 876-10097 06

HEAT PIPES

- 'Thermal-diode' heat pipe
ARC-10997 876-10223 06
Heat pipe technology
HQN-10901 876-10233 06

HEAT RADIATORS

- 'Thermal-diode' heat pipe
ARC-10997 876-10223 06

HEAT RESISTANT ALLOYS

- All-nickel hot-wire probe
ARC-10911 876-10379 06

HEAT SHIELDING

- Thermal insulation for high-temperature systems
GSFC-10954 876-10064 04
Shock-tube driver
NPO-13528 876-10090 06
Thermal/acoustical insulation foam
MSC-14795 876-10195 04
Cryogenic storage tank thermal analysis
MSC-19103 876-10234 06

HEAT SINKS

- Transistor-to-substrate bond quality
M-FS-21931 876-10137 01
Sublimator/evaporator heat sink
ARC-10912 876-10384 06

HEAT SOURCES

- Self-calibrating radiometer
ARC-10811 876-10339 03
Energy conversion system
NPO-13510 876-10485 03

HEAT STORAGE

- NECAP NASA Energy-cost analysis program
LANGLEY-11888 876-10239 06
NASA technology utilization house
LANGLEY-12134 876-10570 07
Economical solar-heating for homes
LANGLEY-12135 876-10571 07

HEAT TRANSFER

- Handbook of liquid metals
M-FS-23355 876-10072 04
Self-contained constant-temperature heat absorber
M-FS-22989 876-10091 06
MINIVER Miniature version of real/ideal gas aero-heating and ablation computer program
M-FS-21951 876-10105 06
Efficient low static-volume water heater
M-FS-22469 876-10116 07
Temperature rise of installed FCC
M-FS-23127 876-10153 01
'Thermal-diode' heat pipe
ARC-10997 876-10223 06

- Heat pipe technology
HQN-10901 876-10233 06
Transient thermal analysis of fluid systems
MSC-19502 876-10401 06
Multidimensional heat conduction
MSC-16159 876-10509 03
One-wire thermocouple
MSC-16220 876-10556 06
Thermal-radiation model
M-FS-23538 876-10562 06
- HEAT TRANSFER COEFFICIENTS**
Heat-transfer coefficients of pin-finned cylinders
LEWIS-12557 876-10554 06
- HEAT TRANSMISSION**
Thermal network modeling handbook
MSC-14964 876-10236 06
- HEAT TREATMENT**
Reduction of acoustic losses by outgassing
MSC-15985 876-10069 04
Low-voltage motor heater
KSC-10651 876-10304 01
Forming hard aluminum in complex shapes
MSC-19693 876-10579 08
Electric heating for metal surface hardening
M-FS-19268 876-10580 08
- HEATING**
Efficient low static-volume water heater
M-FS-22469 876-10116 07
- HEATING EQUIPMENT**
ESOP Version IV Energy systems optimization program
MSC-14854 876-10106 06
SESOP Program for solar-energy heating-systems analysis
MSC-14853 876-10113 06
Efficient low static-volume water heater
M-FS-22469 876-10116 07
Improved high-temperature heater with stabilized-zirconia elements
M-FS-23351 876-10221 06
Heat pipe technology
HQN-10901 876-10233 06
Low-voltage motor heater
KSC-10651 876-10304 01
External heater for cryogenic vessels
MSC-14056 876-10337 03
NASA technology utilization house
LANGLEY-12134 876-10570 07
Economical solar-heating for homes
LANGLEY-12135 876-10571 07
- HEAVING**
Air-cushion landing systems
LANGLEY-11783 876-10397 06
- HELICAL WINDINGS**
Zero-angle helical coil
GSFC-10969 876-10085 06
- HELIUM-NEON LASERS**
Laser extensometer
M-FS-19259 876-10030 03
Laser particulate spectrometer
MSC-14969 876-10331 03
- HERMETIC SEALS**
Explosive-seam welding seals large pressure vessels
LANGLEY-12132 876-10588 08
- HIGH ALTITUDE PRESSURE**
Low-pressure-gas sampling pump
ARC-10941 876-10573 07
- HIGH PRESSURE**
Hydrostatic lift-off seal
M-FS-21496 876-10079 06
- HIGH RESOLUTION**
High-resolution electron microscope
NPO-13811 876-10499 03
- HIGH TEMPERATURE GASES**
Borosilicate glass-to-Kovar tube bonding
GSFC-12077 876-10278 08
- HIGH TEMPERATURE TESTS**
Thermal insulation for high-temperature systems
GSFC-10954 876-10064 04
High-temperature heating array
MSC-14287 876-10251 07
- HINGES**
Multiposition rescue litter
MSC-16148 876-10368 05
- HOLDERS**
Multiposition rescue litter
MSC-16148 876-10368 05
Door latch with through-access hole
MSC-19634 876-10414 07
Controlled linear clasper/loader
GSFC-12105 876-10432 08
Vacuum holddown fixture
MSC-19666 876-10589 08
- HOLOGRAMMETRY**
Dual-purpose holocamera
LEWIS-12166 876-10505 03
- HOLOGRAPHY**
Holography with surface plasma waves
M-FS-22040 876-10039 03
Permanent holographic storage medium
M-FS-22588 876-10044 03
Electrode structure for uniform corona discharge
M-FS-22617 876-10045 03
Double-exposure holographic interferometer
NPO-13796 876-10169 03
Photorefractive page composer
M-FS-23419 876-10171 03
Field distribution in a thin lens
LANGLEY-11392 876-10179 03
Optics and lasers
HQN-10893 876-10187 03
Optical devices
HQN-10891 876-10188 03
Hologram-reconstruction signal enhancement
M-FS-23104 876-10343 03
Dual-purpose holocamera
LEWIS-12166 876-10505 03
- HOMODYNE RECEPTION**
Wind velocity measurement
M-FS-23362 876-10172 03
- HONEYCOMB STRUCTURES**
3-D foam adhesive deposition
M-FS-22739 876-10271 08
Improved bonding of honeycomb panels
MSC-19560 876-10428 08
- HOOKS**
Load-regulating latch
MSC-19535 876-10252 07
- HORN ANTENNAS**
Free-space microwave-power transmission
M-FS-23443 876-10162 02
Multifrequency broadband dual-polarized antenna
NPO-13866 876-10464 01
- HORNS**
Inexpensive low-voltage solid-state alarm
LEWIS-12544 876-10320 02
- HOT WORKING**
Reducing cold flow in elastomeric O-rings
M-FS-24336 876-10086 06
- HOT-WIRE ANEMOMETERS**
Hot-wire probe
ARC-10900 876-10222 06
All-nickel hot-wire probe
ARC-10911 876-10379 06
- HUMAN FACTORS ENGINEERING**
Proton tissue dose
LANGLEY-11802 876-10078 05
Video simulator with electronic ranging
MSC-14965 876-10474 02
- HUMAN PATHOLOGY**
Short-range biotelemetry system
MSC-16011 876-10369 05
- HUMIDITY**
Automatic fire/weather data station
ARC-10993 876-10160 02
Relative humidity from psychrometric data
FRC-10108 876-10285 09
- HUMIDITY MEASUREMENT**
Quartz-crystal-oscillator hygrometer
GSFC-12153 876-10349 03
- HYBRID CIRCUITS**
Hybrid-mode thermionic converter
HQN-10876 876-10056 03
Guidelines for multiple LSI packaging
M-FS-23367 876-10159 01
Foldback current-limiting for hybrid regulator
M-FS-22995 876-10301 01
Hybrid thin-film amplifier
MSC-13975 876-10314 01
Thick-film preamplifier
NPO-13416 876-10459 01
- HYDRAULIC CONTROL**
Fail-safe hydraulic shaker protection
NPO-13726 876-10218 06
- HYDRAULIC EQUIPMENT**
Constant-rate fluid-delivery system
MSC-14905 876-10214 06
Fail-safe hydraulic shaker protection
NPO-13726 876-10218 06
Fluid handling equipment
HQN-10890 876-10232 06
Split-ring seal
MSC-14304 876-10247 07
Atmosphere-generating system
MSC-14713 876-10389 06
Transient thermal analysis of fluid systems
MSC-19502 876-10401 06
Powered wheel for aircraft
LANGLEY-12053 876-10411 07
Long-life ball-valve design
M-FS-19282 876-10576 07
- HYDRAZINES**
Atmosphere-generating system
MSC-14713 876-10389 06
Determining total carbon in hydrazine
KSC-11022 876-10521 04
Stress-corrosion cracking due to hydrazine
ARC-11093 876-10526 04
- HYDROCARBON FUELS**
Surfactant-assisted coal liquefaction
NPO-13904 876-10517 04
- HYDROCHLORIC ACID**
Continuous HCl in air indicator
NPO-13474 876-10060 04
Hydrogen chloride test set
M-FS-23357 876-10063 04

HYDRODYNAMICS

- Cavitating performance of pumping machinery
LEWIS-12423 876-10394 06
Hydrodynamic lubrication of face seals
LEWIS-12710 876-10558 06

HYDROFOILS

- Cavitating performance of pumping machinery
LEWIS-12423 876-10394 06
Hydrofoil controls outfall effluents in rivers and oceans
LANGLEY-12045 876-10488 03

HYDROGEN

- Atmosphere-generating system
MSC-14713 876-10389 06

HYDROGEN FUELS

- Hydrogen Energy A bibliography with abstracts
HQN-10898 876-10189 03

HYDROGEN-BASED ENERGY

- Hydrogen Energy A bibliography with abstracts
HQN-10898 876-10189 03

HYDROGENATION

- Surfactant-assisted coal liquefaction
NPO-13904 876-10517 04

HYDROMECHANICS

- Fluid handling equipment
HQN-10890 876-10232 06
Hydrofoil controls outfall effluents in rivers and oceans
LANGLEY-12045 876-10488 03

HYDROSTATIC PRESSURE

- Hydrostatic lift-off seal
M-FS-21496 876-10079 06

HYDROSTATICS

- Hydrodynamic lubrication of face seals
LEWIS-12710 876-10558 06

HYGROMETERS

- Quartz-crystal-oscillator hygrometer
GSFC-12153 876-10349 03
Remote moisture-content balance
ARC-11032 876-10492 03

HYPERSONIC BOUNDARY LAYER

- Hot-wire probe
ARC-10900 876-10222 06

HYPERSONIC FLOW

- Analytic numerical solutions for shock waves
ARC-10959 876-10096 06
Shock interference patterns and heating
LANGLEY-11497 876-10240 06

ICE FORMATION

- All-weather ice information system
LEWIS-12638 876-10018 02

ICE MAPPING

- All-weather ice information system
LEWIS-12638 876-10018 02

ICEBERGS

- All-weather ice information system
LEWIS-12638 876-10018 02

IDENTIFYING

- Inexpensive tags for tubes or cables
LEWIS-12676 876-10584 08

IGNITION SYSTEMS

- Sustained-arc ignition system
LEWIS-12444 876-10410 07
Electrostatic-discharge ignition
NPO-13798 876-10487 03

ILLUMINATION

- Analog-to-binary conversion of video data
GSFC-11918 876-10165 02

IMAGE CONTRAST

- Contrast enhancement of transparencies
GSFC-11989 876-10181 03

IMAGE CONVERTERS

- X-ray sensitive oblique imaging device
GSFC-11935 876-10504 03

IMAGE DISSECTOR TUBES

- Anamorphic lens for tracking system
NPO-13062 876-10046 03
Calibration of image dissector tubes
M-FS-22208 876-10055 03

IMAGE ENHANCEMENT

- Selective image enhancement
M-FS-23364 876-10021 02
Interactive imaging and data processing
NPO-13655 876-10167 02
Contrast enhancement of transparencies
GSFC-11989 876-10181 03
Image intensification of developed photographs
M-FS-23461 876-10495 03
High-resolution electron microscope
NPO-13811 876-10499 03
Magnifying image intensifier
GSFC-12010 876-10506 03
Multispectral-scanner image processing
GSFC-12135 876-10508 03

IMAGE INTENSIFIERS

- Improved collimator for imaging system
M-FS-22863 876-10038 03
Vidicon intensifier
NPO-11912 876-10054 03
Calibration of image dissector tubes
M-FS-22208 876-10055 03
Deflection amplifier for image dissectors
NPO-13079 876-10449 01
X-ray sensitive oblique imaging device
GSFC-11935 876-10504 03
Magnifying image intensifier
GSFC-12010 876-10506 03
Multispectral-scanner image processing
GSFC-12135 876-10508 03
Digital image-rectification system
GSFC-12156 876-10513 03

IMAGE ORTHICONS

- Calibration of image dissector tubes
M-FS-22208 876-10055 03

IMAGING TECHNIQUES

- Color to black-and-white converter
MSC-12618 876-10346 03
Improved resolution for sensor arrays
NPO-13745 876-10439 01
Advanced imaging communication system
NPO-13545 876-10482 02
High-resolution electron microscope
NPO-13811 876-10499 03
X-ray sensitive oblique imaging device
GSFC-11935 876-10504 03
Dual-purpose holocamera
LEWIS-12166 876-10505 03
Multispectral-scanner image processing
GSFC-12135 876-10508 03
Multispectral imaging for medical diagnosis
NPO-13922 876-10540 05

- Document restoration by computer techniques
HQN-10910 876-10597 09

- CAMSP Classification and Mensuration Software Package
MSC-14979 876-10600 09

IMPACT LOADS

- Low-onset-rate energy absorber
MSC-12279 876-10385 06

IMPACT PREDICTION

- Impact response analyses
M-FS-23335 876-10559 06
Impact of a solid body with water
M-FS-23512 876-10560 06

IMPEDANCE MATCHING

- Pulse transformer for GaAs laser
M-FS-23399 876-10185 03

IMPEDANCE MEASUREMENTS

- Time-domain reflectometry for cable-fault isolation
KSC-10741 876-10377 06

IMPELLERS

- Spin-rate control device
ARC-10884 876-10417 07

IMPURITIES

- Determining total carbon in hydrazine
KSC-11022 876-10521 04
Detecting contamination on a metal surface
M-FS-19260 876-10552 06

INCIDENT RADIATION

- Two-dimensional photon detector
M-FS-23325 876-10048 03

INCOMPRESSIBLE FLOW

- Swept wing aerodynamics
ARC-10790 876-10403 06

INDEXES (DOCUMENTATION)

- Library information retrieval system
NPO-14017 876-10599 09

INDICATING INSTRUMENTS

- Pressure tube instrumentation
LEWIS-12539 876-10101 06
Radial level
LANGLEY-11982 876-10246 07
AC adapter for fuel-flow sensor
GSFC-12037 876-10387 06

INDUCTANCE

- Direct-reading inductance meter
NPO-13792 876-10473 02

INDUCTION MOTORS

- Low-voltage motor heater
KSC-10651 876-10304 01
Induction motor analysis
LEWIS-12687 876-10484 02

INDUCTORS

- RF shaping of silicon ribbon
M-FS-23424 876-10258 08
Composite stacked moly-permalloy cores
NPO-13578 876-10294 01
Simplified cut-core inductor
NPO-13600 876-10317 01

INDUSTRIAL ENERGY

- Hydrogen Energy A bibliography with abstracts
HQN-10898 876-10189 03

INDUSTRIAL MANAGEMENT

- Learning/cost-improvement curves
M-FS-23429 876-10287 09

INDUSTRIAL WASTES

- Atmospheric particle sampler
NPO-13396 876-10059 04
Catalytic oxidation of waste materials
MSC-14831 876-10354 04
Hydrofoil controls outfall effluents in rivers and oceans
LANGLEY-12045 876-10488 03

INFORMATION

- Data-management and information system
NPO-13716 B76-10602 09
Code-usage analysis system
MSC-16214 B76-10603 09

INFORMATION RETRIEVAL

- Readout method for stored information
NPO-13243 B76-10029 02
Recording-tape position sensor
GSFC-12056 B76-10577 07
Document restoration by computer techniques
HQN-10910 B76-10597 09
Library information retrieval system
NPO-14017 B76-10599 09
Information retrieval and display system
M-FS-23510 B76-10606 09

INFORMATION SYSTEMS

- Photorefractive page composer
M-FS-23419 B76-10171 03

INFORMATION THEORY

- Long binary frame sync words
NPO-13727 B76-10163 02
Concatenated algebraic decoder
MSC-14058 B76-10325 02
Interleaved cyclic codes
KSC-11040 B76-10435 09

INFRARED DETECTORS

- Pyroionic infrared detector
LANGLEY-11921 B76-10204 04

INFRARED IMAGERY

- Beam patterns of light-emitting diodes
GSFC-11890 B76-10040 03

INFRARED LASERS

- Beam patterns of light-emitting diodes
GSFC-11890 B76-10040 03

INFRARED PHOTOGRAPHY

- Liquid-cooled bra for cancer detection
ARC-11007 B76-10533 05
Multispectral imaging for medical diagnosis
NPO-13922 B76-10540 05

INFRARED SCANNERS

- Synchronized backside-weld follower
M-FS-24454 B76-10272 08

INFRARED SPECTROMETERS

- Miniature carbon dioxide sensor
MSC-16009 B76-10344 03
Portable solar radiometer measures stack-plume effluents
LANGLEY-12123 B76-10491 03

INFRARED SPECTROSCOPY

- Tunable acoustical optical filter
NPO-13640 B76-10340 03

INJECTION

- Propellant side feed
LANGLEY-11082 B76-10094 06

INLET FLOW

- Design analysis of radial-inflow turbines
LEWIS-12684 B76-10561 06

INLET NOZZLES

- Borosilicate glass-to-Kovar tube bonding
GSFC-12077 B76-10278 08

INORGANIC CHEMISTRY

- Growing crystals from eutectic melts
M-FS-22926 B76-10202 04
Annealing strained alloy 718
M-FS-19242 B76-10284 08

INSPECTION

- Computer-automated ultrasonic inspection system
M-FS-23338 B76-10217 06
Simplified explosive-weld evaluation
MSC-14654 B76-10228 06

- Graphical methods for variable sampling plans
MSC-19279 B76-10431 08
Ultrasonic monitoring of crack extension
LEWIS-12632 B76-10547 06

INSTALLATION MANUALS

- Installation of surface-mounted flat-conductor cable
M-FS-23266 B76-10158 01

INSTALLING

- Pressure tube instrumentation
LEWIS-12539 B76-10101 06

INSTRUMENT LANDING SYSTEMS

- Multiplane binocular visual display system
ARC-10808 B76-10168 02

INSTRUMENT ORIENTATION

- Optical alignment system
ARC-10932 B76-10178 03

INSTRUMENT TRANSMITTERS

- A/D converter
LANGLEY-11319 B76-10009 01
Disposable biomedical electrode
MSC-14623 B76-10363 05
Miniature-angular-position transducer
LANGLEY-11999 B76-10555 06

INSULATED STRUCTURES

- Thermal/acoustical insulation foam
MSC-14795 B76-10195 04

INSULATION

- Thermal insulation for high-temperature systems
GSFC-10954 B76-10064 04
Solar thermal energy utilization A bibliography with abstracts
HQN-10900 B76-10186 03
Thermal/acoustical insulation foam
MSC-14795 B76-10195 04
Improved insulation material
MSC-14642 B76-10197 04

INTEGRAL EQUATIONS

- Integral-matrix procedure for boundary-layer problems
M-FS-23348 B76-10608 09

INTEGRATED CIRCUITS

- DIP extractor simplifies circuit removal
MSC-12712 B76-10002 01
Mask analysis program
M-FS-23431 B76-10318 01
Open-loop digital frequency multiplier
MSC-12709 B76-10447 01
Parylene coating for circuit components
M-FS-23450 B76-10583 08
Elimination of thermally generated EMF's on PC boards
MSC-16125 B76-10594 08

INTEGRATORS

- A/D converter
LANGLEY-11319 B76-10009 01

INTENSIFIERS

- Calibration of image dissector tubes
M-FS-22208 B76-10055 03

INTERFACES

- CMOS-compatible tristate cable driver
M-FS-23410 B76-10149 01

INTERFEROMETERS

- Stepping optical path difference in an interferometer
NPO-13569 B76-10033 03
Improved interferometer beam splitter
NPO-11932 B76-10041 03
Measuring scatter angle from mirrors
M-FS-23421 B76-10342 03

INTERFEROMETRY

- Dual-purpose holocamera
LEWIS-12166 B76-10505 03

INTERNAL COMBUSTION ENGINES

- Improved automobile gas turbine engine
LEWIS-12521 B76-10115 07
Sustained-arc ignition system
LEWIS-12444 B76-10410 07
Electrostatic-discharge ignition
NPO-13798 B76-10487 03
Indicated mean-effective pressure instrument
LEWIS-12661 B76-10542 06

INTERNATIONAL SYSTEM OF UNITS

- Astronautic structures manual
M-FS-23547 B76-10393 06

INTERPOLATION

- Curvilinear bicubic-spline-fit interpolation
LANGLEY-11391 B76-10434 09
Contouring randomly spaced data
LANGLEY-12044 B76-10436 09
Improved resolution for sensor arrays
NPO-13745 B76-10439 01

INTERROGATION

- Low-cost pressure-data encoder
NPO-13692 B76-10303 01

INVENTORY MANAGEMENT

- Estimation of spares
MSC-19469 B76-10133 09

INVERTERS

- A nonsaturating dc-to-dc parallel power converter
GSFC-12047 B76-10290 01
Fluorescent dimming ballast
MSC-14937 B76-10292 01

INVISCID FLOW

- Analytic numerical solutions for shock waves
ARC-10959 B76-10096 06
Shock interference patterns and heating
LANGLEY-11497 B76-10240 06
Swept wing aerodynamics
ARC-10790 B76-10403 06

ION BEAMS

- Double-focusing mass spectrometer
NPO-13663 B76-10183 03

ION EXCHANGE MEMBRANE ELECTROLYTES

- REDOX - electrochemical energy storage
LEWIS-12220 B76-10070 04

ION EXCHANGING

- Extraction of urea and ammonium ion
ARC-11064 B76-10515 04

ION IMPLANTATION

- IGFET/SOI fabrication method
M-FS-23312 B76-10259 08

ION INJECTION

- Fabrication and applications of electrets
M-FS-23437 B76-10429 08

ION PUMPS

- Double-focusing mass spectrometer
NPO-13663 B76-10183 03

ION SELECTIVE ELECTRODES

- Specific-ion electrodes for measuring Ag ions
MSC-14906 B76-10068 04

IONIZATION

- Pyroionic infrared detector
LANGLEY-11921 B76-10204 04

ISOLATORS

- Low-onset-rate energy absorber
MSC-12279 B76-10385 06

ISOTHERMAL PROCESSES

- Improved high-temperature heater with stabilized-zirconia elements
M-FS-23351 B76-10221 06

ITERATIVE NETWORKS

Control logic for successive-approximation A/D converters
NPO-11937 B76-10010 01
Inductorless voltage multiplier/converter
NPO-13757 B76-10445 01

J**J-85 ENGINE**

Jet engine stator-blade removal tool
MSC-16000 B76-10420 07

JACKETS

Electrical-cable design guide
M-FS-24280 B76-10157 01

JET AIRCRAFT NOISE

Noise suppressor for turbofan-jet engines
ARC-10812 B76-10375 06

JET ENGINES

Noise suppressor for turbofan-jet engines
ARC-10812 B76-10375 06

JET EXHAUST

Swept-tapered-wing aerodynamics
LANGLEY-11701 B76-10112 06

JET THRUST

Propellant side feed
LANGLEY-11082 B76-10094 06

JIGS

Precision centering vise
KSC-11041 B76-10409 07
Controlled linear clasper/loader
GSFC-12105 B76-10432 08
Vacuum holddown fixture
MSC-19666 B76-10589 08

JOINTS (JUNCTIONS)

Analysis of bonded joints
LANGLEY-11871 B76-10231 06
Flexible fitting for fluid lines
MSC-17780 B76-10277 08
Technique for joining metal tubing
ARC-10946 B76-10279 08
Astronautic structures manual
M-FS-23547 B76-10393 06
Improved bonding of honeycomb panels
MSC-19560 B76-10428 08

JOSEPHSON JUNCTIONS

Improved microbridge Josephson devices
M-FS-23274 B76-10012 01

JOULE-THOMSON EFFECT

Joule-Thomson data curves
KSC-10538 B76-10102 06

JUMPERS

Multiple-layer printed-wiring trace connector
LANGLEY-11709 B76-10305 01

JUNCTION DIODES

Semiconductor ohmic contact
LANGLEY-11691 B76-10461 01

K**KINEMATIC EQUATIONS**

Impact response analyses
M-FS-23335 B76-10559 06

KINESTHESIA

Measuring mandibular motions
ARC-10956 B76-10362 05
In vivo bone-strain telemetry
ARC-11074 B76-10535 05

KIRCHHOFF LAW OF RADIATION

Thermal network modeling handbook
MSC-14964 B76-10236 06

KOVAR (TRADEMARK)

Solar cell electrical connections
LEWIS-12293 B76-10260 08
Borosilicate glass-to-Kovar tube bonding
GSFC-12077 B76-10278 08

L**LABORATORY EQUIPMENT**

Leak testing glass ampoules
LANGLEY-11988 B76-10551 06

LAGEOS (SATELLITE)

Thermal/vacuum testing of laser corner-cube retroreflectors
M-FS-23565 B76-10549 06

LAGRANGE MULTIPLIERS

Impact response analyses
M-FS-23335 B76-10559 06
Trimmed noncoplanar planforms with minimum vortex drag
LANGLEY-12121 B76-10566 06

LAMINAR BOUNDARY LAYER

Shock interference patterns and heating
LANGLEY-11497 B76-10240 06
Integral-matrix procedure for boundary-layer problems
M-FS-23348 B76-10608 09

LAMINAR FLOW

Transient thermal analysis of fluid systems
MSC-19502 B76-10401 06

LAMINATES

Thermal insulation for high-temperature systems
GSFC-10954 B76-10064 04
BUCLAP2
LANGLEY-11696 B76-10111 06
Manufacture of flat-conductor cable
M-FS-23121 B76-10155 01
Composite laminate warpage
LEWIS-12615 B76-10355 04
Flexible-pile thermal sealant
MSC-19568 B76-10371 06
Low-pressure low-temperature molding process
MSC-19778 B76-10425 08

LANDING AIDS

Multipane binocular visual display system
ARC-10808 B76-10168 02

LANDING GEAR

Crosswind landing-gear position indicator
LANGLEY-11941 B76-10120 07

LANDING INSTRUMENTS

Crosswind landing-gear position indicator
LANGLEY-11941 B76-10120 07

LANDING LOADS

Impact of a solid body with water
M-FS-23512 B76-10560 06

LANDING SIMULATION

Full-color hybrid display
ARC-10903 B76-10477 02

LANDSAT SATELLITES

DAM - detection and mapping
MSC-16096 B76-10370 05

LAPLACE EQUATION

Systems improved numerical differencing analyzer
MSC-13805 B76-10609 09

LARGE SCALE INTEGRATION

Economical custom LSI arrays
M-FS-23262 B76-10004 01
Guidelines for multiple LSI packaging
M-FS-23367 B76-10159 01

LASER CAVITIES

Pulse transformer for GaAs laser
M-FS-23399 B76-10185 03

LASER MODES

Stabilized Nd YAG laser output
GSFC-11571 B76-10335 03

LASER OUTPUTS

Beam patterns of light-emitting diodes
GSFC-11890 B76-10040 03
Dual-purpose holocamera
LEWIS-12166 B76-10505 03

LASER PLASMAS

Efficient copper-vapor pulsed laser
NPO-13449 B76-10341 03

LASER RANGE FINDERS

Pointing control/roll positioning mechanism
M-FS-22809 B76-10121 07

LASERS

Double-exposure holographic interferometer
NPO-13796 B76-10169 03
Photorefractive page composer
M-FS-23419 B76-10171 03
Wind velocity measurement
M-FS-23362 B76-10172 03
Combined GaAs laser outputs
M-FS-23397 B76-10173 03
Airport laser-Doppler
M-FS-23423 B76-10174 03
Low-threshold light-emitting-diode laser
LANGLEY-11477 B76-10176 03
Simplified deflection-coil linearity testing
M-FS-23400 B76-10180 03
Contrast enhancement of transparencies
GSFC-11989 B76-10181 03
Optics and lasers
HQN-10893 B76-10187 03
Optical devices
HQN-10891 B76-10188 03
Bit-error rates in optical communications
M-FS-23340 B76-10286 09

LATCHES

Load-regulating latch
MSC-19535 B76-10252 07
Door latch with through-access hole
MSC-19634 B76-10414 07

LATERAL CONTROL

Pointing control/roll positioning mechanism
M-FS-22809 B76-10121 07
Omnidirectional wheel
M-FS-21309 B76-10575 07

LATITUDE

Geodetic control net
NPO-13718 B76-10510 03

LATTICE PARAMETERS

Faster X-ray analysis of semiconductor wafers
M-FS-23315 B76-10225 06
Crystal orientation for solid-state photolithography
LANGLEY-11940 B76-10582 08

LAW (JURISPRUDENCE)

Thermoluminescence for forensic analysis
NPO-11607 B76-10192 04

LEAD COMPOUNDS

Nucleation of electronic-crystal regions
B76-10524 04

LEAKAGE

- Inexpensive leak-detector envelope
LEWIS-11305 B76-10084 06
- Stopping small liquid leaks
KSC-10667 B76-10126 08
- Leak testing glass ampoules
LANGLEY-11988 B76-10551 06

LEARNING CURVES

- Learning/cost-improvement curves
M-FS-23429 B76-10287 09

LEAST SQUARES METHOD

- Development ephemeris number 96
NPO-14002 B76-10507 03
- Estimating aircraft states
ARC-10969 B76-10567 06

LEG (ANATOMY)

- In vivo bone-strain telemetry
ARC-11074 B76-10535 05
- An artificial leg for hip disarticulation
ARC-10916 B76-10541 05

LENS DESIGN

- Anamorphic lens for tracking system
NPO-13062 B76-10046 03
- Analysis of laser heterodyne communications
GSFC-12098 B76-10511 03

LENSES

- Improved Einzel lenses
M-FS-23115 B76-10032 03
- CONVERT Technique and computer program for calculating photographic film-density variations
LANGLEY-11873 B76-10057 03
- Field distribution in a thin lens
LANGLEY-11392 B76-10179 03
- Antireflection coating for plastic lenses
ARC-10983 B76-10591 08

LEVELING

- Leveling apparatus for precision instruments
ARC-10981 B76-10572 07

LIAPUNOV FUNCTIONS

- Linear stochastic optimal control and estimation
LEWIS-12505 B76-10134 09
- Linear stochastic optimal control and estimation
LEWIS-12540 B76-10607 09

LIBRARIES

- Library information retrieval system
NPO-14017 B76-10599 09

LIFE SPAN

- Birth/death process model
NPO-13616 B76-10213 05

LIFE SUPPORT SYSTEMS

- Atmosphere-generating system
MSC-14713 B76-10389 06
- Extraction of urea and ammonium ion
ARC-11064 B76-10515 04
- Caution and warning system
MSC-16046 B76-10531 05

LIFT

- Estimating subsonic aerodynamic characteristics of complex planforms
LANGLEY-11047 B76-10565 06

LIGHT AMPLIFIERS

- Charge-sensitive amplifier with notched frequency response
LANGLEY-11317 B76-10440 01

LIGHT BEAMS

- Optical bias assembly
MSC-14412 B76-10051 03
- Beam splitter/combiner
GSFC-12083 B76-10177 03

LIGHT EMISSION

- Optical devices
HQN-10891 B76-10188 03

- Thermoluminescence for forensic analysis
NPO-11607 B76-10192 04

LIGHT EMITTING DIODES

- Electro-optical liquid depth sensor
M-FS-22921 B76-10024 02
- Light pipes for LED measurements
GSFC-11887 B76-10034 03
- Calibration source for sensitive optical detectors
LANGLEY-11625 B76-10036 03
- Beam patterns of light-emitting diodes
GSFC-11890 B76-10040 03
- Determination of radiative current in LEDs
GSFC-12034 B76-10042 03
- Calibration of image dissector tubes
M-FS-22208 B76-10055 03
- Low-threshold light-emitting-diode laser
LANGLEY-11477 B76-10176 03
- Epitaxial growth of Ga_{1-x}Al_xAs on GaP
GSFC-11826 B76-10261 08
- Solid-state turn-coordinator display
LANGLEY-12090 B76-10451 01

LIGHT SCATTERING

- Economical measurement of particle concentration
GSFC-12088 B76-10332 03
- Measuring scatter angle from mirrors
M-FS-23421 B76-10342 03

LIGHT SOURCES

- Calibration source for sensitive optical detectors
LANGLEY-11625 B76-10036 03

LIGHTING EQUIPMENT

- Fluorescent-lamp power supply
MSC-14900 B76-10140 01

LIGHTNING

- WING Calculating lightning-induced voltages in electrical circuits within an aircraft wing
LEWIS-12108 B76-10351 03

LIGNIN

- Extracting lignins from mill wastes
NPO-13847 B76-10514 04

LIMITER CIRCUITS

- Foldback current-limiting for hybrid regulator
M-FS-22995 B76-10301 01
- Low-frequency sine wave hard-limiting technique
NPO-13230 B76-10309 01
- Capacitively-coupled data receiver clipper stage
MSC-14989 B76-10456 01
- Active inrush-current limiter
GSFC-11789 B76-10467 01

LINE SPECTRA

- Shadow mask for X-ray spectrometer
GSFC-12131 B76-10348 03

LINEAR CIRCUITS

- Modular design of high frequency circuits
M-FS-23408 B76-10139 01
- Deflection amplifier for image dissectors
NPO-13079 B76-10449 01

LINEAR INTEGRATED CIRCUITS

- Hybrid thin-film amplifier
MSC-13975 B76-10314 01

LIQUEFIED NATURAL GAS

- Vapor/liquid interface sensor
MSC-12474 B76-10220 06
- Cryogenic storage tank thermal analysis
MSC-19103 B76-10234 06
- Safety organizations and experts
LEWIS-12742 B76-10598 09

LIQUID BEARINGS

- Fluid-film bearing damper
LEWIS-11158 B76-10378 06

LIQUID INJECTION

- Constant-rate fluid-delivery system
MSC-14905 B76-10214 06

LIQUID LEVELS

- Electro-optical liquid depth sensor
M-FS-22921 B76-10024 02

LIQUID METALS

- Handbook of liquid metals
M-FS-23355 B76-10072 04

LIQUID SLOSHING

- Liquid-retention canopy
M-FS-24133 B76-10092 06

LIQUID-SOLID INTERFACES

- Electro-optical liquid depth sensor
M-FS-22921 B76-10024 02

LIQUIDS

- Stopping small liquid leaks
KSC-10667 B76-10126 08

LITHIUM NIOBATES

- Nucleation of electronic-crystal regions
M-FS-23049 B76-10524 04

LOAD DISTRIBUTION (FORCES)

- Load-regulating latch
MSC-19535 B76-10252 07
- Dynamic load attenuator
MSC-17472 B76-10416 07

LOAD TESTS

- Ultrasonic monitoring of crack extension
LEWIS-12632 B76-10547 06

LOADING MOMENTS

- Cable-load equalization system
MSC-17494 B76-10230 06
- Vehicle load-equalization system
MSC-12466 B76-10249 07

LOADING OPERATIONS

- Improved road handler
M-FS-23233 B76-10413 07

LOADING RATE

- Dynamic load attenuator
MSC-17472 B76-10416 07

LOADS (FORCES)

- Accelerator for biomedical studies
ARC-10898 B76-10367 05
- Improved road handler
M-FS-23233 B76-10413 07
- Energy-absorbing attenuator
MSC-17473 B76-10419 07
- Mechanical loader for testing composites
LEWIS-12432 B76-10548 06
- Transpose of finite-element data
MSC-19644 B76-10564 06

LOCKS

- Door latch with through-access hole
MSC-19634 B76-10414 07

LOGIC CIRCUITS

- Control logic for successive-approximation A/D converters
NPO-11937 B76-10010 01
- M-ary shift register
NPO-11868 B76-10011 01
- Pulse amplitude discriminator threshold calibration
GSFC-11912 B76-10023 02

LOGISTICS MANAGEMENT

- DORCA II Dynamic operations requirements and cost analysis program
HQN-10834 B76-10289 09

LONGITUDE

- Geodetic control net
NPO-13718 B76-10510 03

LONGITUDINAL CONTROL

- Pointing control/roll positioning
mechanism
M-FS-22809 876-10121 07
- LOW ALTITUDE**
Gust alleviation for STOL aircraft
LANGLEY-11413 876-10099 06
- LOW DENSITY MATERIALS**
Polymeric foams stable at high
temperatures
ARC-11008 876-10065 04
Thermal/acoustical insulation foam
MSC-14795 876-10195 04
- LOW PASS FILTERS**
Pinhole diffraction filter
GSFC-12120 876-10333 03
- LOW PRESSURE**
Low-pressure-gas sampling pump
ARC-10941 876-10573 07
- LOW TEMPERATURE TESTS**
Low-temperature thermoluminescence
NPO-11935 876-10193 04
- LUBRICATION**
Hydrodynamic lubrication of face seals
LEWIS-12710 876-10558 06
- LUMINAIRES**
Fluorescent-lamp power supply
MSC-14900 876-10140 01
High-temperature heating array
MSC-14287 876-10251 07
- LUMINOUS INTENSITY**
Solid-state turn-coordinator display
LANGLEY-12090 876-10451 01

M**MACH NUMBER**

- Joule-Thomson data curves
KSC-10538 876-10102 06

MACH-ZEHNDER INTERFEROMETERS

- Double-exposure holographic
interferometer
NPO-13796 876-10169 03

MACHINE TOOLS

- Rotary broaches
M-FS-23374 876-10248 07
Hand and power tools
HQN-10892 876-10257 07
Air-suspended dynamometer table
NPO-13794 876-10376 06
Vacuum holddown fixture
MSC-19666 876-10589 08

MACHINING

- Rotary broaches
M-FS-23374 876-10248 07
Electron-beam welder alinement
MSC-19642 876-10269 08
Machining titanium alloys
M-FS-23006 876-10283 08

MAGNETIC CIRCUITS

- Fluorescent dimming ballast
MSC-14937 876-10292 01
A passive chevron replicator
LANGLEY-11906 876-10441 01

MAGNETIC COILS

- RF shaping of silicon ribbon
M-FS-23424 876-10258 08
Simplified cut-core inductor
NPO-13600 876-10317 01
Magnifying image intensifier
GSFC-12010 876-10506 03

MAGNETIC CORES

- Toroidal converter core
NPO-13413 876-10293 01

- Transformer design tradeoffs
NPO-13755 876-10470 01

MAGNETIC DOMAINS

- Triple-layer bubble-domain film
LANGLEY-11755 876-10006 01
Analog data recording on MnBi film
NPO-13302 876-10175 03
A passive chevron replicator
LANGLEY-11906 876-10441 01
New passive replicator for bubble domain
devices
LANGLEY-11997 876-10442 01
Continuous-data FIFO bubble shift
register
LANGLEY-11862 876-10443 01
Multiple-bubble detector
LANGLEY-12043 876-10444 01

MAGNETIC FORMING

- RF shaping of silicon ribbon
M-FS-23424 876-10258 08

MAGNETIC INDUCTION

- Nondestructive inspection of multilayered
insulation
M-FS-22191 876-10128 08
Induction motor analysis
LEWIS-12687 876-10484 02

MAGNETIC LENSES

- Magnifying image intensifier
GSFC-12010 876-10506 03

MAGNETIC POLES

- Double-focusing mass spectrometer
NPO-13663 876-10183 03

MAGNETIC RECORDING

- Analog data recording on MnBi film
NPO-13302 876-10175 03
Safety brake for tape reels
GSFC-11960 876-10412 07

MAGNETIC STORAGE

- Triple-layer bubble-domain film
LANGLEY-11755 876-10006 01
Low-light-level integrating video system
M-FS-23288 876-10347 03
A passive chevron replicator
LANGLEY-11906 876-10441 01
New passive replicator for bubble domain
devices
LANGLEY-11997 876-10442 01
Continuous-data FIFO bubble shift
register
LANGLEY-11862 876-10443 01

MAGNETOMETERS

- Cyclical bi-directional rotary actuator
GSFC-11883 876-10117 07

MAGNETS

- Double-focusing mass spectrometer
NPO-13663 876-10183 03

MAINTENANCE

- Plug-in light switches
M-FS-24183 876-10001 01
Inexpensive leak-detector envelope
LEWIS-11305 876-10084 06
Stopping small liquid leaks
KSC-10667 876-10126 08
Frozen-fluid line repair
MSC-19132 876-10227 06
Repair of fused silica platens
MSC-19713 876-10276 08
Jet engine stator-blade removal tool
MSC-16000 876-10420 07

MAN MACHINE SYSTEMS

- Graphic-to-digital conversion system
M-FS-24410 876-10019 02
Interactive imaging and data processing
NPO-13655 876-10167 02
Computer-automated ultrasonic
inspection system
M-FS-23338 876-10217 06

- Overhead tray for cable test system
MSC-19488 876-10270 08
Flexible high-speed instrumentation
system
FRC-10110 876-10483 02

MANAGEMENT INFORMATION SYSTEMS

- Business capabilities file
NPO-13834 876-10136 09
- MANAGEMENT SYSTEMS**
Information retrieval and display system
M-FS-23510 876-10606 09

MANDRELS

- Low-pressure low-temperature molding
process
MSC-19778 876-10425 08

MANIFOLDS

- Conical diffuser for fuel cells
MSC-14026 876-10255 07

MANIPULATORS

- Selective image enhancement
M-FS-23364 876-10021 02
Video display synthesizer
MSC-14620 876-10052 03
Concentric-tube differential drive
M-FS-22707 876-10114 07
Infrared range sensor
ARC-10885 876-10475 02

MANUFACTURING

- Connector contact-ring bus
MSC-19480 876-10146 01
Flat-conductor cable baseboard
M-FS-23141 876-10154 01
Manufacture of flat-conductor cable
M-FS-23121 876-10155 01
Installation of surface-mounted
flat-conductor cable
M-FS-23266 876-10158 01

MAPPING

- SANDTRACKS World map and stations
predictions computer programs
GSFC-12099 876-10190 03
DAM - detection and mapping
MSC-16096 876-10370 05
Contouring randomly spaced data
LANGLEY-12044 876-10436 09
Digital image-rectification system
GSFC-12156 876-10513 03

MARINE RESOURCES

- Remote sensing of natural resources
HQN-10899 876-10238 06

MARKING

- Inexpensive tags for tubes or cables
LEWIS-12676 876-10584 08

MARKOV PROCESSES

- Birth/death process model
NPO-13616 876-10213 05

MASKING

- Mask analysis program
M-FS-23431 876-10318 01
Crystal orientation for solid-state
photolithography
LANGLEY-11940 876-10582 08

MASKS

- Firefighter's breathing system
MSC-14733 876-10208 05

MASONRY

- Hot-wire tile removal tool
KSC-11043 876-10433 08

MASS FLOW

- Indicated mean-effective pressure
instrument
LEWIS-12661 876-10542 06

MASS SPECTROMETERS

- Inexpensive leak-detector envelope
LEWIS-11305 876-10084 06

- Double-focusing mass spectrometer
NPO-13663 876-10183 03
Borosilicate glass-to-Kovar tube
bonding
GSFC-12077 876-10278 08
- MATERIALS HANDLING**
Aseptic fluid-transfer system
NPO-13743 876-10210 05
DORCA II Dynamic operations
requirements and cost analysis program
HQN-10834 876-10289 09
Improved road handler
M-FS-23233 876-10413 07
Inexpensive tags for tubes or cables
LEWIS-12676 876-10584 08
- MATERIALS RECOVERY**
DIP extractor simplifies circuit removal
MSC-12712 876-10002 01
- MATERIALS TESTS**
Comparative thermal fatigue resistance
LEWIS-12563 876-10062 04
Computer-automated ultrasonic
inspection system
M-FS-23338 876-10217 06
Faster X-ray analysis of semiconductor
wafers
M-FS-23315 876-10225 06
- MATHEMATICAL MODELS**
Birth/death process model
NPO-13616 876-10213 05
Attenuation of sound in ducts with
acoustic treatment
LEWIS-12686 876-10226 06
Design of redundant systems
MSC-16026 876-10383 06
Time-domain aircraft model
MSC-16018 876-10391 06
SPAR Structural-performance analysis
and redesign
LANGLEY-12062 876-10399 06
Control system design
LEWIS-12556 876-10404 06
Oblique orthographic projections and
contour plots
LANGLEY-11877 876-10601 09
- MATRICES (MATHEMATICS)**
Processing equations for state-space
models
LEWIS-12555 876-10438 09
Linear stochastic optimal control and
estimation
LEWIS-12540 876-10607 09
- MATRIX METHODS**
SPAR Structural-performance analysis
and redesign
LANGLEY-12062 876-10399 06
- MEASURING INSTRUMENTS**
Ultraviolet fire detector
M-FS-21577 876-10016 02
Light pipes for LED measurements
GSFC-11887 876-10034 03
Inexpensive leak-detector envelope
LEWIS-11305 876-10084 06
Hot-wire probe
ARC-10900 876-10222 06
Radial level
LANGLEY-11982 876-10246 07
Signal level detector
NPO-13272 876-10310 01
Self-calibrating radiometer
ARC-10811 876-10339 03
Air-suspended dynamometer table
NPO-13794 876-10376 06
Capacitive shaft-angle encoder
ARC-10897 876-10386 06
Direct-reading inductance meter
NPO-13792 876-10473 02
- Instrumentation for measuring low-level
currents/voltages
MSC-14855 876-10480 02
Automated secondary standard for liquid
flowmeters
LEWIS-12695 876-10544 06
Detecting contamination on a metal
surface
M-FS-19260 876-10552 06
Miniature-angular-position transducer
LANGLEY-11999 876-10555 06
Pulse detector
MSC-16268 876-10557 06
- MECHANICAL DEVICES**
Exercise support for therapy
LANGLEY-11975 876-10074 05
Cyclical bidirectional rotary actuator
GSFC-11883 876-10117 07
Roll-forming tubes to header plates
LEWIS-10513 876-10130 08
Mechanical positioner
MSC-15817 876-10245 07
Safety brake for tape reels
GSFC-11960 876-10412 07
- MECHANICAL DRIVES**
Cyclical bidirectional rotary actuator
GSFC-11883 876-10117 07
Cable-load equalization system
MSC-17494 876-10230 06
Heavy-duty mechanical sequencer
MSC-19536 876-10418 07
DC drive system for cine/pulse
cameras
MSC-16085 876-10497 03
- MECHANICAL MEASUREMENT**
Rous system
LANGLEY-12015 876-10215 06
ROUS bolt-tensioning monitor
LANGLEY-12016 876-10216 06
Air-suspended dynamometer table
NPO-13794 876-10376 06
- MECHANICAL OSCILLATORS**
Accelerator for biomedical studies
ARC-10898 876-10367 05
- MECHANICAL PROPERTIES**
Lightweight orthotic appliances
LANGLEY-11918 876-10076 05
Relative stiffness of flat-conductor
cable
M-FS-23537 876-10469 01
General instability analysis
M-FS-23407 876-10563 06
- MECHANICAL SHOCK**
Low-onset-rate energy absorber
MSC-12279 876-10385 06
- MEDICAL ELECTRONICS**
Physician's modern Black Bag
MSC-14936 876-10212 05
Disposable biomedical electrode
MSC-14623 876-10363 05
Automated EEG acquisition
MSC-16111 876-10364 05
Short-range biotelemetry system
MSC-16011 876-10369 05
- MEDICAL EQUIPMENT**
Exercise support for therapy
LANGLEY-11975 876-10074 05
Occlusive-cuff controller
MSC-14836 876-10207 05
Physician's modern Black Bag
MSC-14936 876-10212 05
Disposable biomedical electrode
MSC-14623 876-10363 05
Rocking-motion sensor for the blind
MSC-14805 876-10366 05
Multiposition rescue litter
MSC-16148 876-10368 05
- Interlocking butterfly tourniquet
MSC-19382 876-10532 05
- MEDICAL PERSONNEL**
Physician's modern Black Bag
MSC-14936 876-10212 05
- MEDICAL SCIENCE**
Measuring mandibular motions
ARC-10956 876-10362 05
- MEDICAL SERVICES**
Physician's modern Black Bag
MSC-14936 876-10212 05
- MEMBRANES**
Membrane has high urea-rejection
properties
ARC-10980 876-10518 04
- MERCATOR PROJECTION**
Digital image-rectification system
GSFC-12156 876-10513 03
- MERCURY LAMPS**
Increased safety in mercury-containing
devices
M-FS-23308 876-10013 01
- METABOLIC WASTES**
Signal processing and display for
electrochemical data
LANGLEY-11922 876-10327 02
Remote water-monitoring system
LANGLEY-11973 876-10365 05
Extraction of urea and ammonium ion
ARC-11064 876-10515 04
- METAL BONDING**
Simplified explosive-weld evaluation
MSC-14654 876-10228 06
Analysis of bonded joints
LANGLEY-11871 876-10231 06
Borosilicate glass-to-Kovar tube
bonding
GSFC-12077 876-10278 08
Technique for joining metal tubing
ARC-10946 876-10279 08
Transducer bonding kit
MSC-19690 876-10587 08
- METAL CRYSTALS**
Containerless processing of tungsten
M-FS-23509 876-10422 08
- METAL CUTTING**
Rotary broaches
M-FS-23374 876-10248 07
- METAL DRAWING**
Acoustic-energy shaping of meltable
metals
NPO-13802 876-10423 08
- METAL FATIGUE**
Stress-corrosion cracking due to
hydrazine
ARC-11093 876-10526 04
- METAL FILMS**
Reduced costs for solar-cell modules
LEWIS-12185 876-10427 08
- METAL FINISHING**
Passive thermal-control coatings
M-FS-22794 876-10071 04
Vapor corrosion inhibitors
M-FS-19232 876-10206 04
Detection of surface impurities on
processed metals
MSC-19670 876-10553 06
Aluminum transfer method for plating
plastics
MSC-16221 876-10593 08
- METAL JOINTS**
Precision centering vise
KSC-11041 876-10409 07
Explosive-seam welding seals large
pressure vessels
LANGLEY-12132 876-10588 08

METAL OXIDE SEMICONDUCTORS

CMOS-compatible tristate cable driver
M-FS-23410 876-10149 01

METAL PLATES

Metal structures with parallel pores
GSFC-10984 876-10131 08

METAL POLISHING

Polishing technique for beryllium mirror
M-FS-22923 876-10049 03

METAL POWDER

Aluminum transfer method for plating plastics
MSC-16221 876-10593 08

METAL SURFACES

Detecting contamination on a metal surface
M-FS-19260 876-10552 06

Detection of surface impurities on processed metals
MSC-19670 876-10553 06

Electric heating for metal surface hardening
M-FS-19268 876-10580 08

METAL VAPORS

Efficient copper-vapor pulsed laser
NPO-13449 876-10341 03

METAL WORKING

Roll-forming tubes to header plates
LEWIS-10513 876-10130 08

Metalworking method for composites
M-FS-23354 876-10132 08

Improved soldering iron tip
M-FS-19349 876-10145 01

Crack-growth analysis
M-FS-23320 876-10243 06

Hand and power tools
HQN-10892 876-10257 07

Method of removing drilling chips
M-FS-19235 876-10262 08

Diffusion brazing nickel-plated stainless steel
MSC-19322 876-10265 08

Improved photochemical etching of stainless steel
MSC-19728 876-10268 08

Ablative-filled honeycomb composites
LANGLEY-11180 876-10273 08

Compound solder joints
LANGLEY-11444 876-10274 08

Technique for joining metal tubing
ARC-10946 876-10279 08

Annealing strained alloy 718
M-FS-19242 876-10284 08

Acoustic-energy shaping of meltable metals
NPO-13802 876-10423 08

Detection of surface impurities on processed metals
MSC-19670 876-10553 06

Forming hard aluminum in complex shapes
MSC-19693 876-10579 08

METAL-METAL BONDING

Polymer adhesives for hybrid circuits
M-FS-23287 876-10015 01

Combined joining process for dissimilar metals A concept
MSC-19323 876-10127 08

Diffusion brazing nickel-plated stainless steel
MSC-19322 876-10265 08

Compound solder joints
LANGLEY-11444 876-10274 08

METALLIZING

Polymer adhesives for hybrid circuits
M-FS-23287 876-10015 01

METALLOGRAPHY

Determining eutectic composition in metal alloys
LEWIS-12633 876-10520 04

METALLURGY

Comparative thermal fatigue resistance
LEWIS-12563 876-10062 04

Metalworking method for composites
M-FS-23354 876-10132 08

METEOROLOGICAL INSTRUMENTS

Quartz-crystal-oscillator hygrometer
GSFC-12153 876-10349 03

METEOROLOGICAL PARAMETERS

Relative humidity from psychrometric data
FRC-10108 876-10285 09

METEOROLOGICAL SATELLITES

Remote, unattended forest fire detector
M-FS-21221 876-10077 05

MICA

Fabrication and applications of electrets
M-FS-23437 876-10429 08

MICHELSON INTERFEROMETERS

Servo corrects interferometer-mirror tilt
NPO-13687 876-10502 03

MICROBIOLOGY

Fast measurement of bacterial susceptibility to antibiotics
GSFC-10246 876-10536 05

MICROCHANNELS

Microchannel detector array for X-rays and UV
M-FS-23324 876-10053 03

MICRODENSITOMETERS

CONVERT Technique and computer program for calculating photographic film-density variations
LANGLEY-11873 876-10057 03

Document restoration by computer techniques
HQN-10910 876-10597 09

MICROELECTRONICS

Economical custom LSI arrays
M-FS-23262 876-10004 01

Organic adhesives for hybrid microcircuits
M-FS-23370 876-10014 01

Polymer adhesives for hybrid circuits
M-FS-23287 876-10015 01

Reliability of hybrid microcircuit bonding
M-FS-23358 876-10129 08

MICROMODULES

Guidelines for multiple LSI packaging
M-FS-23367 876-10159 01

Microprogrammable module
MSC-19456 876-10312 01

MICROORGANISMS

Signal processing and display for electrochemical data
LANGLEY-11922 876-10327 02

Remote water-monitoring system
LANGLEY-11973 876-10365 05

MICROPROGRAMMING

Microprogramming for real-time data acquisition
KSC-11027 876-10328 02

MICROSCOPES

Optical devices
HQN-10891 876-10188 03

MICROTHRUST

Propellant side feed
LANGLEY-11082 876-10094 06

MICROWAVE AMPLIFIERS

UHF/microwave oscillator/amplifier
GSFC-12113 876-10455 01

Fabrication of ultra-low-noise amplifier
GSFC-12186 876-10596 08

MICROWAVE ANTENNAS

Free-space microwave-power transmission
M-FS-23443 876-10162 02

Low-cost dual-frequency microwave antenna
MSC-16100 876-10462 01

Active retrodirective antenna
NPO-13641 876-10463 01

Multifrequency broadband, dual-polarized antenna
NPO-13866 876-10464 01

MICROWAVE FILTERS

RAM digital filter
NPO-13659 876-10316 01

MICROWAVE OSCILLATORS

UHF/microwave oscillator/amplifier
GSFC-12113 876-10455 01

MICROWAVE RADIOMETERS

Temperature reference for microwave radiometer calibration
LANGLEY-11355 876-10503 03

MICROWAVE SWITCHING

Effects of mismatch on group delay of microwave transmission
NPO-13863 876-10478 02

MICROWAVES

Temperature reference for microwave radiometer calibration
LANGLEY-11355 876-10503 03

MIE SCATTERING

Economical measurement of particle concentration
GSFC-12088 876-10332 03

MILLIMETER WAVES

Low-cost dual-frequency microwave antenna
MSC-16100 876-10462 01

MILLING (MACHINING)

Rotary broaches
M-FS-23374 876-10248 07

Hand and power tools
HQN-10892 876-10257 07

MINIATURE ELECTRONIC EQUIPMENT

Plug-in circuit monitor
MSC-19455 876-10311 01

Microprogrammable module
MSC-19456 876-10312 01

UHF/microwave oscillator/amplifier
GSFC-12113 876-10455 01

MINIATURIZATION

Printed-circuit solar-cell array
M-FS-23128 876-10007 01

MIRRORS

Polishing technique for beryllium mirror
M-FS-22923 876-10049 03

Combined GaAs laser outputs
M-FS-23397 876-10173 03

Low-reflectivity spectrally selective coating
GSFC-12114 876-10184 03

Active optics simulation system
LANGLEY-12104 876-10512 03

MISSILE TRAJECTORIES

Impact of a solid body with water
M-FS-23512 876-10560 06

MIXERS

Mixing ingredients in foam dispenser
M-FS-20607 876-10592 08

MIXING

Mixing ingredients in foam dispenser
M-FS-20607 876-10592 08

MODEMS

Remote access of modem by digital control
GSFC-11943 876-10022 02

MODULATION

Demodulator aids synchronization
NPO-13605 876-10164 02

MODULES

Removal of encapsulating materials
GSFC-11696 876-10143 01

MODULUS OF ELASTICITY

Yield-pressure determination
MSC-14655 876-10581 08

MOISTURE CONTENT

Remote sensing of vegetation and soil
GSFC-11976 876-10490 03

MOISTURE METERS

Quartz-crystal-oscillator hygrometer
GSFC-12153 876-10349 03
Remote moisture-content balance
ARC-11032 876-10492 03

MOLDING MATERIALS

Low-pressure low-temperature molding process
MSC-19778 876-10425 08
Aluminum transfer method for plating plastics
MSC-16221 876-10593 08

MOLDS

Low-pressure low-temperature molding process
MSC-19778 876-10425 08

MOMENTUM THEORY

Impact response analyses
M-FS-23335 876-10559 06

MONITORS

Continuous HCl in air indicator
NPO-13474 876-10060 04
Remote unattended forest fire detector
M-FS-21221 876-10077 05
Signal level detector
NPO-13272 876-10310 01
Plug-in circuit monitor
MSC-19455 876-10311 01
AC adapter for fuel-flow sensor
GSFC-12037 876-10387 06
Caution and warning system
MSC-16046 876-10531 05

MONOCHROMATORS

Miniature carbon dioxide sensor
MSC-16009 876-10344 03

MONOMERS

Second-generation PMR polyimides
LEWIS-12738 876-10359 04

MONTE CARLO METHOD

Multivariate normal integration
M-FS-22867 876-10288 09

MOTION

Analog data recording on MnBi film
NPO-13302 876-10175 03

MOTION PERCEPTION

Tracking system for moving subjects
HQN-10880 876-10028 02
Rocking-motion sensor for the blind
MSC-14805 876-10366 05

MOTION PICTURES

DC drive system for cine/pulse cameras
MSC-16085 876-10497 03

MOTION SIMULATORS

Video simulator with electronic ranging
MSC-14965 876-10474 02

MOTION STABILITY

Rocking-motion sensor for the blind
MSC-14805 876-10366 05
Spin-rate control device
ARC-10884 876-10417 07

MOTORS

Powered wheel for aircraft
LANGLEY-12053 876-10411 07
Ironless-armature brushless motor
GSFC-11880 876-10476 02

MTBF

Pump failure monitor
M-FS-23366 876-10219 06

MULLITES

Coatings for mullite insulation
LANGLEY-11150 876-10067 04

MULTILAYER INSULATION

Thermal insulation for high-temperature systems
GSFC-10954 876-10064 04
Nondestructive inspection of multilayered insulation
M-FS-22191 876-10128 08
Improved insulation material
MSC-14642 876-10197 04
External heater for cryogenic vessels
MSC-14056 876-10337 03
Fuel-cell powerplant insulation
MSC-16012 876-10426 08
Multilayer insulative systems
LANGLEY-12057 876-10528 04

MULTIPLEXING

General-purpose data link
M-FS-22714 876-10025 02
Unichromatic-carrier color-TV system
MSC-14683 876-10026 02
Flexible high-speed instrumentation system
FRC-10110 876-10483 02
Data system for multiplexed water-current meters
M-FS-23343 876-10493 03

MULTISPECTRAL BAND SCANNERS

DAM - detection and mapping
MSC-16096 876-10370 05
Digital image-rectification system
GSFC-12156 876-10513 03
CAMSP Classification and Mensuration Software Package
MSC-14979 876-10600 09

MULTISPECTRAL PHOTOGRAPHY

Multispectral-scanner image processing
GSFC-12135 876-10508 03
Multispectral imaging for medical diagnosis
NPO-13922 876-10540 05

MULTIVARIATE STATISTICAL ANALYSIS

Multivariate normal integration
M-FS-22867 876-10288 09

MUSCULOSKELETAL SYSTEM

In vivo bone-strain telemetry
ARC-11074 876-10535 05

MYLAR (TRADEMARK)

Improved insulation material
MSC-14642 876-10197 04

MYOCARDIUM

Myocardial wall-thickness transducer
NPO-13644 876-10075 05

N**NAVIER-STOKES EQUATION**

COMOC a finite-element algorithm for the Navier-Stokes equations
LANGLEY-11480 876-10241 06

NAVIGATION AIDS

All-weather ice information system
LEWIS-12638 876-10018 02

Video display synthesizer

MSC-14620 876-10052 03

NAVIGATION INSTRUMENTS

Pulse transformer for GaAs laser
M-FS-23399 876-10185 03
Low-cost pressure-data encoder
NPO-13692 876-10303 01

NEGATIVE RESISTANCE CIRCUITS

UHF/microwave oscillator/amplifier
GSFC-12113 876-10455 01

NEPHELOMETERS

Introducing controlled matter into a fluid system
M-FS-24309 876-10093 06
Economical measurement of particle concentration
GSFC-12088 876-10332 03

NEURISTORS

Superconductive neuristor R-junction
HQN-10871 876-10003 01

NEUROPHYSIOLOGY

Manual dexterity evaluator
LANGLEY-12022 876-10209 05

NEWTON-RAPHSON METHOD

Determining aircraft stability and control derivatives
FRC-10109 876-10402 06

NICHROME (TRADEMARK)

Polishing gold and gold-alloy crystals
M-FS-22800 876-10263 08

NICKEL ALLOYS

Thermal fatigue-and-oxidation-resistant alloy
LEWIS-12564 876-10061 04
Comparative thermal fatigue resistance
LEWIS-12563 876-10062 04
Polishing gold and gold-alloy crystals
M-FS-22800 876-10263 08
One-wire thermocouple
MSC-16220 876-10556 06

NICKEL CADMIUM BATTERIES

Battery-cell thermal test facility
M-FS-23040 876-10124 08
Compact reconditioner for Ni/Cd cells
M-FS-23270 876-10141 01

NICKEL PLATE

Diffusion brazing nickel-plated stainless steel
MSC-19322 876-10265 08

NITROBENZENES

Novel aminobenzyl and imidobenzyl benzenes
LANGLEY-11843 876-10058 04

NITROGEN

Atmosphere-generating system
MSC-14713 876-10389 06

NITROUS OXIDES

Portable solar radiometer measures stack-plume effluents
LANGLEY-12123 876-10491 03

NOISE PROPAGATION

Acoustic testing of materials
LANGLEY-11659 876-10550 06

NOISE REDUCTION

Thermal/acoustical insulation foam
MSC-14795 876-10195 04
Shadow mask for X-ray spectrometer
GSFC-12131 876-10348 03
Biased-circuit digital data line receiver
MSC-14967 876-10457 01

NOISE SPECTRA

Receiver performance evaluator
NPO-13701 876-10324 02

NOISE TEMPERATURE

Fabrication of ultra-low-noise amplifier
GSFC-12186 876-10596 08

NOMOGRAPHS

Nomograph for castor-cushion design
MSC-17094 B76-10229 06

NONDESTRUCTIVE TESTS

Nondestructive inspection of multilayered insulation
M-FS-22191 B76-10128 08
Computer-automated ultrasonic inspection system
M-FS-23338 B76-10217 06
Ultrasonic measurement of fracture toughness
LEWIS-12642 B76-10372 06
Nondestructive interior examination of moving parts
M-FS-23378 B76-10545 06
Ultrasonic monitoring of crack extension
LEWIS-12632 B76-10547 06

NONFLAMMABLE MATERIALS

Experimental data for new fire-retardant materials
MSC-16022 B76-10361 04

NORMAL DENSITY FUNCTIONS

Bit-error rates in optical communications
M-FS-23340 B76-10286 09

NOSE CONES

Tangent-ogive nose cones
GSFC-11468 B76-10107 06

NOZZLE DESIGN

Mixing ingredients in foam dispenser
M-FS-20607 B76-10592 08

NOZZLE INSERTS

Mixing ingredients in foam dispenser
M-FS-20607 B76-10592 08

NUCLEAR RADIATION

Solid-state particle detectors
GSFC-11785 B76-10142 01

NUCLEATION

Nucleation of electronic-crystal regions
B76-10524 04

NUMERICAL ANALYSIS

Selective image enhancement
M-FS-23364 B76-10021 02
Guide for testing numerical-integration subroutines
NPO-11644 B76-10135 09
Math model of 3-D aircraft configuration
LANGLEY-12029 B76-10400 06
Curvilinear bicubic-spline-fit interpolation
LANGLEY-11391 B76-10434 09
Electrostatic analysis of charge-coupled structures
M-FS-23507 B76-10472 01
Development ephemeris number 96
NPO-14002 B76-10507 03
Active optics simulation system
LANGLEY-12104 B76-10512 03
Multilayer insulative systems
LANGLEY-12057 B76-10528 04
Rapid kinetics
LANGLEY-12140 B76-10529 04
Estimating aircraft states
ARC-10969 B76-10567 06
Systems improved numerical differencing analyzer
MSC-13805 B76-10609 09
Input/output error analyzer
GSFC-12132 B76-10610 09

NUMERICAL INTEGRATION

Analytic numerical solutions for shock waves
ARC-10959 B76-10096 06

Guide for testing numerical-integration subroutines
NPO-11644 B76-10135 09

Crack-growth analysis
M-FS-23320 B76-10243 06

NUTRITION

Meal system for the elderly
MSC-16062 B76-10530 05

NUTS (FASTENERS)

High-torque open-end wrench
NPO-13541 B76-10405 07

O

O RING SEALS

Cost saving synergistic shaft seal
LEWIS-12119 B76-10081 06
Reducing cold flow in elastomeric O-rings
M-FS-24336 B76-10086 06
Soft seat A-N fitting for vacuum use
LEWIS-10130 B76-10408 07

OBSERVATION AIRCRAFT

All-weather ice information system
LEWIS-12638 B76-10018 02

OCCLUSION

Measuring mandibular motions
ARC-10956 B76-10362 05

OCEANOGRAPHY

DAM - detection and mapping
MSC-16096 B76-10370 05

OGIVES

Tangent-ogive nose cones
GSFC-11468 B76-10107 06
Cavitating performance of pumping machinery
LEWIS-12423 B76-10394 06

OHMS LAW

Thermal network modeling handbook
MSC-14964 B76-10236 06

OPERATIONAL AMPLIFIERS

Hybrid thin-film amplifier
MSC-13975 B76-10314 01

OPTICAL COMMUNICATION

Voltage control for corona charging thermoplastics
M-FS-23102 B76-10043 03
Electrode structure for uniform corona discharge
M-FS-22617 B76-10045 03
Simplified deflection-coil linearity testing
M-FS-23400 B76-10180 03
Bit-error rates in optical communications
M-FS-23340 B76-10286 09
Stabilized Nd YAG laser output
GSFC-11571 B76-10335 03
Analysis of laser heterodyne communications
GSFC-12098 B76-10511 03

OPTICAL CORRECTION PROCEDURE

Optical alignment system
ARC-10932 B76-10178 03
Servo corrects interferometer-mirror tilt
NPO-13687 B76-10502 03

OPTICAL DATA PROCESSING

Photorefractive page composer
M-FS-23419 B76-10171 03
CAMSP Classification and Mensuration Software Package
MSC-14979 B76-10600 09

OPTICAL DENSITY

Readout method for stored information
NPO-13243 B76-10029 02

OPTICAL EMISSION SPECTROSCOPY

Calibration source for sensitive optical detectors
LANGLEY-11625 B76-10036 03
Tunable acoustical optical filter
NPO-13640 B76-10340 03

OPTICAL EQUIPMENT

Stepping optical path difference in an interferometer
NPO-13569 B76-10033 03
Light pipes for LED measurements
GSFC-11887 B76-10034 03
Calibration source for sensitive optical detectors
LANGLEY-11625 B76-10036 03
Measurement of transient reflectance
M-FS-23160 B76-10037 03
Calibration of image dissector tubes
M-FS-22208 B76-10055 03
Photorefractive page composer
M-FS-23419 B76-10171 03
Optical alignment system
ARC-10932 B76-10178 03
Low-reflectivity spectrally selective coating
GSFC-12114 B76-10184 03
Optical devices
HQN-10891 B76-10188 03
Pinhole diffraction filter
GSFC-12120 B76-10333 03
Vacuum-ultraviolet reflectometer
MSC-14995 B76-10336 03
Measuring scatter angle from mirrors
M-FS-23421 B76-10342 03
Color to black-and-white converter
MSC-12618 B76-10346 03
Differential-optoacoustic absorption detector
NPO-13759 B76-10494 03
Spatially-coherent coupled semiconductor lasers
M-FS-23396 B76-10500 03

OPTICAL FILTERS

Unichromatic-carrier color-TV system
MSC-14683 B76-10026 02
Combined GaAs laser outputs
M-FS-23397 B76-10173 03
Low-reflectivity spectrally selective coating
GSFC-12114 B76-10184 03
Color to black-and-white converter
MSC-12618 B76-10346 03

OPTICAL HETERODYNING

Hologram-reconstruction signal enhancement
M-FS-23104 B76-10343 03
Analysis of laser heterodyne communications
GSFC-12098 B76-10511 03

OPTICAL MEASUREMENT

Measurement of transient reflectance
M-FS-23160 B76-10037 03

OPTICAL MEASURING INSTRUMENTS

Laser extensometer
M-FS-19259 B76-10030 03
Stepping optical path difference in an interferometer
NPO-13569 B76-10033 03
Ellipsometer for measurement in ultrahigh vacuum
M-FS-23130 B76-10035 03
Calibration source for sensitive optical detectors
LANGLEY-11625 B76-10036 03
Optical bias assembly
MSC-14412 B76-10051 03

Quantitative bioluminescent detection of bacteria
 GSFC-12003 876-10073 05
 Double-exposure holographic interferometer
 NPO-13796 876-10169 03
 Laser particulate spectrometer
 MSC-14969 876-10331 03
 Economical measurement of particle concentration
 GSFC-12088 876-10332 03
 Optical profilometer
 LANGLEY-11869 876-10338 03
 Monitor for optical-window contamination
 ARC-10947 876-10345 03
 Improved resolution for sensor arrays
 NPO-13745 876-10439 01
 Precision measurement of changes in physical dimensions
 M-FS-23527 876-10543 06
 Visual projection reticle
 ARC-10976 876-10590 08
OPTICAL MEMORY (DATA STORAGE)
 Hologram-reconstruction signal enhancement
 M-FS-23104 876-10343 03
OPTICAL PROPERTIES
 Ellipsometer for measurement in ultrahigh vacuum
 M-FS-23130 876-10035 03
 Active optics simulation system
 LANGLEY-12104 876-10512 03
OPTICAL RADAR
 Two-wavelength dye laser
 LANGLEY-12012 876-10170 03
 Wind velocity measurement
 M-FS-23362 876-10172 03
 Tunable acoustical optical filter
 NPO-13640 876-10340 03
OPTICAL RANGE FINDERS
 Infrared range sensor
 ARC-10885 876-10475 02
OPTICAL REFLECTION
 Measurement of transient reflectance
 M-FS-23160 876-10037 03
 Low-reflectivity spectrally selective coating
 GSFC-12114 876-10184 03
 Optical profilometer
 LANGLEY-11869 876-10338 03
 Monitor for optical-window contamination
 ARC-10947 876-10345 03
 Thermal/vacuum testing of laser corner-cube retroreflectors
 M-FS-23565 876-10549 06
OPTICAL SCANNERS
 Uniform solar cells
 GSFC-11941 876-10125 08
 Optical profilometer
 LANGLEY-11869 876-10338 03
 Document restoration by computer techniques
 HQN-10910 876-10597 09
OPTICAL TRACKING
 Low-reflectivity spectrally selective coating
 GSFC-12114 876-10184 03
OPTICS
 Measurement of transient reflectance
 M-FS-23160 876-10037 03
 Field distribution in a thin lens
 LANGLEY-11392 876-10179 03
OPTIMAL CONTROL
 Optimal insensitive-controller synthesis
 M-FS-21666 876-10103 06

OPTIMIZATION
 ESOP Version IV Energy systems optimization program
 MSC-14854 876-10106 06
 Transformer design tradeoffs
 NPO-13755 876-10470 01
ORBIT CALCULATION
 SANDTRACKS World map and stations predictions computer programs
 GSFC-12099 876-10190 03
 GEODYN Orbital and geodetic parameter estimation
 GSFC-12014 876-10396 06
ORBITAL POSITION ESTIMATION
 SANDTRACKS World map and stations predictions computer programs
 GSFC-12099 876-10190 03
ORGANIC SILICON COMPOUNDS
 Abrasion-resistant coatings for plastic surfaces
 ARC-10915 876-10201 04
ORGANIC WASTES (FUEL CONVERSION)
 Energy conversion system
 NPO-13510 876-10485 03
ORGANIZATIONS
 Business capabilities file
 NPO-13834 876-10136 09
ORGANOMETALLIC COMPOUNDS
 Catalysts for low-energy aldehyde processes
 NPO-13827 876-10519 04
ORIFICE FLOW
 Venting for condensation in gas lines
 MSC-19621 876-10109 06
ORTHICONS
 Improved collimator for imaging system
 M-FS-22863 876-10038 03
ORTHOPEDICS
 Exercise support for therapy
 LANGLEY-11975 876-10074 05
 Lightweight orthotic appliances
 LANGLEY-11918 876-10076 05
 Graphite-reinforced bone cement
 NPO-13764 876-10211 05
ORTHOTROPIC SHELLS
 Analysis of axisymmetric shell structure
 LANGLEY-12059 876-10398 06
OSCILLATION DAMPERS
 Fluid-film bearing damper
 LEWIS-11158 876-10378 06
OSCILLATORS
 Electronic circuits
 HQN-10894 876-10156 01
 Doppler extraction with a digital VCO
 MSC-14814 876-10452 01
 UHF/microwave oscillator/amplifier
 GSFC-12113 876-10455 01
OSMOSIS
 Membrane has high urea-rejection properties
 ARC-10980 876-10518 04
OUTER PLANETS EXPLORERS
 Shock-tube driver
 NPO-13528 876-10090 06
OUTGASSING
 Organic adhesives for hybrid microcircuits
 M-FS-23370 876-10014 01
 Reduction of acoustic losses by outgassing
 MSC-15985 876-10069 04
 Slotted bolts and studs for vacuum systems
 LEWIS-10391 876-10407 07

OUTLETS
 Plug-in light switches
 M-FS-24183 876-10001 01
OVERVOLTAGE
 Battery single-cell protection system
 LEWIS-12039 876-10306 01
 Purity test for copper-plating solutions
 M-FS-19298 876-10360 04
OXIDATION
 Comparative thermal fatigue resistance
 LEWIS-12563 876-10062 04
 Chemiluminescent prediction of service life
 MSC-16010 876-10191 04
 Catalytic oxidation of waste materials
 MSC-14831 876-10354 04
 Electrolyte cells measure oxygen fugacities
 MSC-16089 876-10523 04
OXYFLUORIDES
 Determination of trace amounts of POF3
 LEWIS-10577 876-10356 04
OXYGEN MASKS
 Firefighter's breathing system
 MSC-14733 876-10208 05
OXYGEN SUPPLY EQUIPMENT
 Atmosphere-generating system
 MSC-14713 876-10389 06
 Miniature emergency oxygen unit
 KSC-11011 876-10539 05
OXYGEN TENSION
 Electrolyte cells measure oxygen fugacities
 MSC-16089 876-10523 04

P

P-N-P JUNCTIONS
 IGFET/SOI fabrication method
 M-FS-23312 876-10259 08
P-TYPE SEMICONDUCTORS
 Semiconductor ohmic contact
 LANGLEY-11691 876-10461 01
PACKAGING
 Compressed air cylinder pallet
 MSC-19217 876-10203 04
 Inexpensive tags for tubes or cables
 LEWIS-12676 876-10584 08
PACKINGS (SEALS)
 Improved cryogenic shaft seals
 M-FS-19153 876-10080 06
 Split-ring seal
 MSC-14304 876-10247 07
 Fundamentals of fluid sealing
 LEWIS-12683 876-10392 06
PADDLES
 Paddle-pin alignment test
 KSC-10740 876-10388 06
PALMGREN-MINER RULE
 Fatigue life of spur and helical gear sets
 LEWIS-12596 876-10224 06
PANELS
 Age-forming aluminum panels
 MSC-12648 876-10281 08
 Modular multipurpose panel support
 MSC-19641 876-10421 08
 Improved bonding of honeycomb panels
 MSC-19560 876-10428 08
PARABOLIC REFLECTORS
 Horizontally-mounted solar collector
 M-FS-23349 876-10256 07

PARALLEL COMPUTERS

- Partitioned counting digital filter
NPO-11832 B76-10298 01
- PARAMETERIZATION**
Control system design
LEWIS-12556 B76-10404 06
Processing equations for state-space models
LEWIS-12555 B76-10438 09
- PARAMETRIC AMPLIFIERS**
Fabrication of ultra-low-noise amplifier
GSFC-12186 B76-10596 08
- PARTIAL PRESSURE**
Electrolyte cells measure oxygen fugacities
MSC-16089 B76-10523 04
Multispecies transient simulator
MSC-14862 B76-10527 04
- PARTICLE DENSITY (CONCENTRATION)**
A forward-scatter polarimeter for chemical analysis
NPO-13756 B76-10334 03
Contamination monitoring of fluids
KSC-11037 B76-10382 06
- PARTICLE SIZE DISTRIBUTION**
Standard aerosols for particle velocimeters
M-FS-23075 B76-10050 03
Fluid classifier and disseminator
HQN-10748 B76-10089 06
Laser particulate spectrometer
MSC-14969 B76-10331 03
Economical measurement of particle concentration
GSFC-12088 B76-10332 03
A forward-scatter polarimeter for chemical analysis
NPO-13756 B76-10334 03
Contamination monitoring of fluids
KSC-11037 B76-10382 06
- PARTICLES**
Standard aerosols for particle velocimeters
M-FS-23075 B76-10050 03
Fluid classifier and disseminator
HQN-10748 B76-10089 06
Solid-state particle detectors
GSFC-11785 B76-10142 01
- PARTICULATE SAMPLING**
Continuous HCl in air indicator
NPO-13474 B76-10060 04
Fluid classifier and disseminator
HQN-10748 B76-10089 06
Introducing controlled matter into a fluid system
M-FS-24309 B76-10093 06
Fabrication and applications of electrets
M-FS-23437 B76-10429 08
Portable wind sensitive directional air sampler
LEWIS-12743 B76-10489 03
- PATTERN RECOGNITION**
Anamorphic lens for tracking system
NPO-13062 B76-10046 03
- PATTERN REGISTRATION**
CAMSP Classification and Mensuration Software Package
MSC-14979 B76-10600 09
- PCM TELEMETRY**
PN ranging/telemetry transmission
GSFC-12017 B76-10323 02
Receiver performance evaluator
NPO-13701 B76-10324 02
- PEELING**
Stripper for silicone polymers
MSC-19380 B76-10267 08

PELTIER EFFECTS

- Elimination of thermally generated EMF's on PC boards
MSC-16125 B76-10594 08

PERCEPTION

- Video simulator with electronic ranging
MSC-14965 B76-10474 02

PERFORMANCE PREDICTION

- Control system design
LEWIS-12556 B76-10404 06

PERFORMANCE TESTS

- Graphical methods for variable sampling plans
MSC-19279 B76-10431 08

PERMALLOYS (TRADEMARK)

- Composite stacked moly-permalloy cores
NPO-13578 B76-10294 01
Simplified cut-core inductor
NPO-13600 B76-10317 01
A passive chevron replicator
LANGLEY-11906 B76-10441 01

PERMEABILITY

- Composite stacked moly-permalloy cores
NPO-13578 B76-10294 01

PHARMACOLOGY

- Leak testing glass ampoules
LANGLEY-11988 B76-10551 06

PHASE COHERENCE

- Combined GaAs laser outputs
M-FS-23397 B76-10173 03

PHASE DEMODULATORS

- Unbalanced quadrature demodulator
MSC-14840 B76-10161 02

PHASE DETECTORS

- Sensor for analog speed controls
LEWIS-12597 B76-10020 02
Tracking a phase-shift-keyed signal
MSC-16170 B76-10481 02

PHASE ERROR

- Unbalanced quadrature demodulator
MSC-14840 B76-10161 02

PHASE LOCK DEMODULATORS

- A linear phase demodulator
GSFC-12018 B76-10291 01

PHASE LOCKED SYSTEMS

- Sensor for analog speed controls
LEWIS-12597 B76-10020 02
Manchester transition tracking loop (MTTL)
MSC-14842 B76-10319 02
Open-loop digital frequency multiplier
MSC-12709 B76-10447 01
Doppler extraction with a digital VCO
MSC-14814 B76-10452 01
Active retrodirective antenna
NPO-13641 B76-10463 01
Tracking a phase-shift-keyed signal
MSC-16170 B76-10481 02

PHASE SHIFT CIRCUITS

- Electronic circuits
HQN-10894 B76-10156 01
Subcarrier signal combiner for arrayed antennas
NPO-13723 B76-10329 02

PHASE SHIFT KEYING

- Long binary frame sync words
NPO-13727 B76-10163 02
Demodulator aids synchronization
NPO-13605 B76-10164 02
A linear phase demodulator
GSFC-12018 B76-10291 01
Tracking a phase-shift-keyed signal
MSC-16170 B76-10481 02

PHENOLS

- Polymeric foams stable at high temperatures
ARC-11008 B76-10065 04

PHOSPHORUS COMPOUNDS

- Determination of trace amounts of POF3
LEWIS-10577 B76-10356 04

PHOTOCATHODES

- Anamorphic lens for tracking system
NPO-13062 B76-10046 03
Microchannel detector array for X-rays and UV
M-FS-23324 B76-10053 03
X-ray sensitive oblique imaging device
GSFC-11935 B76-10504 03

PHOTOCONDUCTORS

- Permanent holographic storage medium
M-FS-22588 B76-10044 03

- Vidicon intensifier
NPO-11912 B76-10054 03

PHOTOELECTRICITY

- JPL solar power experiments
NPO-13461 B76-10098 06

PHOTOGRAPHIC DEVELOPERS

- Image intensification of developed photographs
M-FS-23461 B76-10495 03
Solvent for 1-phenyl-3-pyrazolidone in photography
GSFC-11992 B76-10496 03

PHOTOGRAPHIC FILM

- CONVERT Technique and computer program for calculating photographic film-density variations
LANGLEY-11873 B76-10057 03
Image intensification of developed photographs
M-FS-23461 B76-10495 03
Elimination of color rings on film negatives
GSFC-12110 B76-10498 03

PHOTOGRAPHIC MEASUREMENT

- Standard aerosols for particle velocimeters
M-FS-23075 B76-10050 03

PHOTOGRAPHIC PLATES

- Image intensification of developed photographs
M-FS-23461 B76-10495 03

PHOTOGRAPHIC PROCESSING

- Contrast enhancement of transparencies
GSFC-11989 B76-10181 03
Frame for daylight photocopying
KSC-11026 B76-10406 07
Image intensification of developed photographs
M-FS-23461 B76-10495 03
Elimination of color rings on film negatives
GSFC-12110 B76-10498 03

PHOTOGRAPHIC PROCESSING EQUIPMENT

- Frame for daylight photocopying
KSC-11026 B76-10406 07

PHOTOGRAPHS

- Frame for daylight photocopying
KSC-11026 B76-10406 07

PHOTOGRAPHY

- Optics and lasers
HQN-10893 B76-10187 03
DC drive system for cine/pulse cameras
MSC-16085 B76-10497 03

PHOTOMETERS

- Chemiluminescent prediction of service life
MSC-16010 B76-10191 04

PHOTOMICROGRAPHY

- Simplified explosive-weld evaluation
MSC-14654 B76-10228 06

PHOTOMULTIPLIER TUBES

- Quantitative bioluminescent detection of bacteria
GSFC-12003 B76-10073 05
Charge-sensitive amplifier with notched frequency response
LANGLEY-11317 B76-10440 01

PHOTON BEAMS

- Two-dimensional photon detector
M-FS-23325 B76-10048 03
Simplified deflection-coil linearity testing
M-FS-23400 B76-10180 03

PHOTOVOLTAIC CELLS

- JPL solar power experiments
NPO-13461 B76-10098 06
Terrestrial photovoltaic measurements workshop
LEWIS-12643 B76-10350 03
Reduced costs for solar-cell modules
LEWIS-12185 B76-10427 08
Universal solar-cell terminal
M-FS-23505 B76-10450 01

PHOTOVOLTAIC EFFECT

- Terrestrial photovoltaic measurements workshop
LEWIS-12643 B76-10350 03

PHYSICAL EXAMINATIONS

- Manual dexterity evaluator
LANGLEY-12022 B76-10209 05

PHYSICAL EXERCISE

- Exercise support for therapy
LANGLEY-11975 B76-10074 05

PHYSICAL FITNESS

- Manual dexterity evaluator
LANGLEY-12022 B76-10209 05

PHYSICAL PROPERTIES

- Comparative thermal fatigue resistance
LEWIS-12563 B76-10062 04
Handbook of liquid metals
M-FS-23355 B76-10072 04

PHYSICIANS

- Physician's modern 'Black Bag'
MSC-14936 B76-10212 05

PHYSIOLOGICAL RESPONSES

- Manual dexterity evaluator
LANGLEY-12022 B76-10209 05

PHYSIOLOGICAL TESTS

- Manual dexterity evaluator
LANGLEY-12022 B76-10209 05
In vivo bone-strain telemetry
ARC-11074 B76-10535 05
Fast measurement of bacterial susceptibility to antibiotics
GSFC-10246 B76-10536 05

PILOT TRAINING

- Full-color hybrid display
ARC-10903 B76-10477 02

PINS

- DIP extractor simplifies circuit removal
MSC-12712 B76-10002 01
Paddle-pin alignment test
KSC-10740 B76-10388 06

PIPELINES

- Flange weld pressure testing
M-FS-19292 B76-10546 06

PIPES (TUBES)

- Roll-forming tubes to header plates
LEWIS-10513 B76-10130 08

- Compound solder joints
LANGLEY-11444 B76-10274 08
Technique for joining metal tubing
ARC-10946 B76-10279 08
Brazing/Rebrazing process for CRES steel
MSC-19600 B76-10280 08
High-torque open-end wrench
NPO-13541 B76-10405 07
Precision centering vise
KSC-11041 B76-10409 07
Energy-absorbing attenuator
MSC-17473 B76-10419 07

PITCH (INCLINATION)

- Air-cushion landing systems
LANGLEY-11783 B76-10397 06

PITCHING MOMENTS

- Time-domain aircraft model
MSC-16018 B76-10391 06

PLANET EPHEMERIDES

- Independent trajectory determination system
GSFC-11923 B76-10569 06

PLANNING

- Prevention of design flaws in multicomputer systems
MSC-14920 B76-10330 02

PLASMA JETS

- Efficient copper-vapor pulsed laser
NPO-13449 B76-10341 03

PLASMA WAVES

- Holography with surface plasma waves
M-FS-22040 B76-10039 03

PLASMAS (PHYSICS)

- Double-exposure holographic interferometer
NPO-13796 B76-10169 03
Antireflection coating for plastic lenses
ARC-10983 B76-10591 08

PLASTIC COATINGS

- Solventless intumescent coatings
ARC-10996 B76-10194 04
Abrasion-resistant coatings for plastic surfaces
ARC-10915 B76-10201 04
Parylene coating for circuit components
M-FS-23450 B76-10583 08

PLASTIC DEFORMATION

- Acoustic-energy shaping of malleable metals
NPO-13802 B76-10423 08
Yield-pressure determination
MSC-14655 B76-10581 08

PLASTIC FLOW

- Fundamentals of fluid sealing
LEWIS-12683 B76-10392 06

PLASTICS

- Removal of encapsulating materials
GSFC-11696 B76-10143 01
Mixing ingredients in foam dispenser
M-FS-20607 B76-10592 08
Aluminum transfer method for plating plastics
MSC-16221 B76-10593 08

PLATENS

- Repair of fused silica platens
MSC-19713 B76-10276 08

PLATES

- Repair of fused silica platens
MSC-19713 B76-10276 08

PLATING

- Detection of surface impurities on processed metals
MSC-19670 B76-10553 06
Aluminum transfer method for plating plastics
MSC-16221 B76-10593 08

PLATINUM

- Thermal insulation for high-temperature systems
GSFC-10954 B76-10064 04

PLENUM CHAMBERS

- Conical diffuser for fuel cells
MSC-14026 B76-10255 07

PLETHYSMOGRAPHY

- Occlusive-cuff controller
MSC-14836 B76-10207 05

PLOTTERS

- Graphic-to-digital conversion system
M-FS-24410 B76-10019 02
Manual dexterity evaluator
LANGLEY-12022 B76-10209 05

PLUGS

- Plug-in light switches
M-FS-24183 B76-10001 01

PLUMES

- Portable solar radiometer measures stack-plume effluents
LANGLEY-12123 B76-10491 03
Thermal-radiation model
M-FS-23538 B76-10562 06

PNEUMATIC EQUIPMENT

- Fluid handling equipment
HQN-10890 B76-10232 06
Split-ring seal
MSC-14304 B76-10247 07

PNEUMATICS

- Constant-rate fluid-delivery system
MSC-14905 B76-10214 06

POINTING CONTROL SYSTEMS

- Pointing control/roll positioning mechanism
M-FS-22809 B76-10121 07

POISONS

- Increased safety in mercury-containing devices
M-FS-23308 B76-10013 01

POISSON DENSITY FUNCTIONS

- Simplified deflection-coil linearity testing
M-FS-23400 B76-10180 03
Bit-error rates in optical communications
M-FS-23340 B76-10286 09

POLARIMETERS

- A forward-scatter polarimeter for chemical analysis
NPO-13756 B76-10334 03

POLARIZATION (CHARGE SEPARATION)

- Fabrication and applications of electrets
M-FS-23437 B76-10429 08

POLARIZATION CHARACTERISTICS

- Purity test for copper-plating solutions
M-FS-19298 B76-10360 04

POLARIZED LIGHT

- Ellipsometer for measurement in ultrahigh vacuum
M-FS-23130 B76-10035 03
Color to black-and-white converter
MSC-12618 B76-10346 03

POLAROGRAPHY

- Purity test for copper-plating solutions
M-FS-19298 B76-10360 04

POLISHING

- Polishing technique for beryllium mirror
M-FS-22923 B76-10049 03
Soldering high-impedance Nichrome wire
M-FS-1457 B76-10264 08

POLLUTION

- Catalytic oxidation of waste materials
MSC-14831 B76-10354 04

- Extracting lignins from mill wastes
NPO-13847 876-10514 04
- POLLUTION CONTROL**
Sustained-arc ignition system
LEWIS-12444 876-10410 07
Fabrication and applications of electrets
M-FS-23437 876-10429 08
Hydrofoil controls outfall effluents in rivers and oceans
LANGLEY-12045 876-10488 03
- POLLUTION MONITORING**
Continuous HCl in air indicator
NPO-13474 876-10060 04
Portable wind sensitive, directional air sampler
LEWIS-12743 876-10489 03
Portable solar radiometer measures stack-plume effluents
LANGLEY-12123 876-10491 03
- POLYAMIDE RESINS**
Novel aminobenzyl and imidobenzyl benzenes
LANGLEY-11843 876-10058 04
- POLYETHYLENE TEREPHTHALATE**
Improved insulation material
MSC-14642 876-10197 04
- POLYIMIDE RESINS**
High-temperature flat-conductor cable
M-FS-23451 876-10144 01
Second-generation PMR polyimides
LEWIS-12738 876-10359 04
- POLYIMIDES**
Printed-circuit solar-cell array
M-FS-23128 876-10007 01
Fuel-cell powerplant insulation
MSC-16012 876-10426 08
- POLYMER CHEMISTRY**
Second-generation PMR polyimides
LEWIS-12738 876-10359 04
- POLYMERIC FILMS**
Voltage control for corona charging thermoplastics
M-FS-23102 876-10043 03
Electrode structure for uniform corona discharge
M-FS-22617 876-10045 03
Membrane has high urea-rejection properties
ARC-10980 876-10518 04
Parylene coating for circuit components
M-FS-23450 876-10583 08
- POLYMERIZATION**
Permanent holographic storage medium
M-FS-22588 876-10044 03
Second-generation PMR polyimides
LEWIS-12738 876-10359 04
Membrane has high urea-rejection properties
ARC-10980 876-10518 04
Antireflection coating for plastic lenses
ARC-10983 876-10591 08
- POLYMERS**
Polymer adhesives for hybrid circuits
M-FS-23287 876-10015 01
Polymeric foams stable at high temperatures
ARC-11008 876-10065 04
Transparent and flame-retardant potting compounds
MSC-14669 876-10066 04
Lightweight orthotic appliances
LANGLEY-11918 876-10076 05
Stripper for silicone polymers
MSC-19380 876-10267 08
- POLYMETHYL METHACRYLATE**
Double-exposure holographic interferometer
NPO-13796 876-10169 03
Antireflection coating for plastic lenses
ARC-10983 876-10591 08
- POLYSULFIDES**
Solventless intumescent coatings
ARC-10996 876-10194 04
- POLYURETHANE FOAM**
Viscoelastic foam cushion
ARC-11089 876-10525 04
Mixing ingredients in foam dispenser
M-FS-20607 876-10592 08
- POPULATION THEORY**
Birth/death process model
NPO-13616 876-10213 05
- POROSITY**
Metal structures with parallel pores
GSFC-10984 876-10131 08
Thermal/acoustical insulation foam
MSC-14795 876-10195 04
- POROUS MATERIALS**
Reduction of acoustic losses by outgassing
MSC-15985 876-10069 04
Improved bonding of honeycomb panels
MSC-19560 876-10428 08
- POROUS PLATES**
Metal structures with parallel pores
GSFC-10984 876-10131 08
- PORTABLE EQUIPMENT**
Field sampling fine-vacuum system
KSC-10596 876-10118 07
- POSITION INDICATORS**
Infrared range sensor
ARC-10885 876-10475 02
Recording-tape position sensor
GSFC-12056 876-10577 07
- POSITIONING**
Improved photochemical etching of stainless steel
MSC-19728 876-10268 08
- POSITIONING DEVICES (MACHINERY)**
Mechanical positioner
MSC-15817 876-10245 07
Precision centering vise
KSC-11041 876-10409 07
- POTASSIUM HYDROXIDES**
Stripper for silicone polymers
MSC-19380 876-10267 08
- POTENTIAL FLOW**
Swept wing aerodynamics
ARC-10790 876-10403 06
- POTENTIOMETRIC ANALYSIS**
Signal processing and display for electrochemical data
LANGLEY-11922 876-10327 02
Remote water-monitoring system
LANGLEY-11973 876-10365 05
- POTTING COMPOUNDS**
Transparent and flame-retardant potting compounds
MSC-14669 876-10066 04
Removal of encapsulating materials
GSFC-11696 876-10143 01
Low-pressure low-temperature molding process
MSC-19778 876-10425 08
- POWDERED ALUMINUM**
Aluminum transfer method for plating plastics
MSC-16221 876-10593 08
- POWER**
REDOX - electrochemical energy storage
LEWIS-12220 876-10070 04
- POWER CONDITIONING**
Feedback arrangement for regenerative switches
NPO-13060 876-10302 01
- POWER LINES**
Electrical-cable design guide
M-FS-24280 876-10157 01
- POWER SUPPLIES**
Fluorescent-lamp power supply
MSC-14900 876-10140 01
AC adapter for fuel-flow sensor
GSFC-12037 876-10387 06
Low-power programmable high-voltage supply
LANGLEY-11316 876-10458 01
- POWER SUPPLY CIRCUITS**
Compact reconditioner for Ni/Cd cells
M-FS-23270 876-10141 01
Power-control switch
M-FS-23395 876-10148 01
A nonsaturating dc-to-dc parallel power converter
GSFC-12047 876-10290 01
Toroidal converter core
NPO-13413 876-10293 01
Foldback current-limiting for hybrid regulator
M-FS-22995 876-10301 01
Feedback arrangement for regenerative switches
NPO-13060 876-10302 01
Power supply with optical-isolator control
HQN-10827 876-10466 01
Active inrush-current limiter
GSFC-11789 876-10467 01
- PRECIPITATION (METEOROLOGY)**
Relative humidity from psychrometric data
FRC-10108 876-10285 09
- PRECIPITATION PARTICLE MEASUREMENT**
Fluid classifier and disseminator
HQN-10748 876-10089 06
- PRESSURE**
Flange weld pressure testing
M-FS-19292 876-10546 06
- PRESSURE DROP**
Vapor/liquid interface sensor
MSC-12474 876-10220 06
- PRESSURE GAGES**
ROUS bolt-tensioning monitor
LANGLEY-12016 876-10216 06
- PRESSURE GRADIENTS**
Multispecies transient simulator
MSC-14862 876-10527 04
Hydrodynamic lubrication of face seals
LEWIS-12710 876-10558 06
- PRESSURE MEASUREMENTS**
Fast pressure-sensor system
LANGLEY-12003 876-10087 06
Joule-Thomson data curves
KSC-10538 876-10102 06
Differential-optoacoustic absorption detector
NPO-13759 876-10494 03
Indicated mean-effective pressure instrument
LEWIS-12661 876-10542 06
Prefabricated strain-gage connectors
MSC-19522 876-10595 08

PRESSURE REGULATORS

- Firefighter's breathing system
MSC-14733 B76-10208 05
Constant-rate fluid-delivery system
MSC-14905 B76-10214 06
Gas boost compressor
MSC-14757 B76-10415 07

PRESSURE SENSORS

- Fast pressure-sensor system
LANGLEY-12003 B76-10087 06
Pressure tube instrumentation
LEWIS-12539 B76-10101 06
Vapor/liquid interface sensor
MSC-12474 B76-10220 06
Improved gas-pressure transducer
ARC-10639 B76-10381 06

PRESSURE VESSEL DESIGN

- Ultra-lightweight pressure vessels
MSC-14983 B76-10266 08

PRESSURE VESSELS

- Firefighter's breathing system
MSC-14733 B76-10208 05
Fracture mechanics for weld acceptance
M-FS-23360 B76-10282 08
Cleaning large tanks and gas bottles
MSC-14966 B76-10430 09
Explosive-seam welding seals large pressure vessels
LANGLEY-12132 B76-10588 08

PRESSURE WELDING

- Transducer bonding kit
MSC-19690 B76-10587 08

PREVENTION

- Remote moisture-content balance
ARC-11032 B76-10492 03

PRINTED CIRCUITS

- Printed-circuit solar-cell array
M-FS-23128 B76-10007 01
Guidelines for multiple LSI packaging
M-FS-23367 B76-10159 01
Multiple-layer printed-wiring trace connector
LANGLEY-11709 B76-10305 01
Mask analysis program
M-FS-23431 B76-10318 01
Reduced costs for solar-cell modules
LEWIS-12185 B76-10427 08
Elimination of thermally generated EMF's on PC boards
MSC-16125 B76-10594 08

PRINTING

- Contrast enhancement of transparencies
GSFC-11989 B76-10181 03

PROBABILITY THEORY

- Estimation of spares
MSC-19469 B76-10133 09
Design of redundant systems
MSC-16026 B76-10383 06

PROCEEDINGS

- Terrestrial photovoltaic measurements workshop
LEWIS-12643 B76-10350 03

PRODUCT DEVELOPMENT

- Transformer design tradeoffs
NPO-13755 B76-10470 01

PRODUCTION

- Connector contact-ring bus
MSC-19480 B76-10146 01
Machining titanium alloys
M-FS-23006 B76-10283 08

PRODUCTION ENGINEERING

- Manufacture of flat-conductor cable
M-FS-23121 B76-10155 01
Transformer design tradeoffs
NPO-13755 B76-10470 01

- Nondestructive interior examination of moving parts
M-FS-23378 B76-10545 06

PRODUCTION MANAGEMENT

- Learning/cost-improvement curves
M-FS-23429 B76-10287 09

PROFILOMETERS

- Optical profilometer
LANGLEY-11869 B76-10338 03

PROJECTIVE GEOMETRY

- Oblique orthographic projections and contour plots
LANGLEY-11877 B76-10601 09

PROPAGATION VELOCITY

- Effects of mismatch on group delay of microwave transmission
NPO-13863 B76-10478 02

PROPELLANT PROPERTIES

- Propellant side feed
LANGLEY-11082 B76-10094 06

PROPELLANT TESTS

- Propellant side feed
LANGLEY-11082 B76-10094 06

PROSTHETIC DEVICES

- Graphite-reinforced bone cement
NPO-13764 B76-10211 05
An artificial leg for hip disarticulation
ARC-10916 B76-10541 05

PROTECTIVE COATINGS

- Improved microbridge Josephson devices
M-FS-23274 B76-10012 01
Transparent and flame-retardant potting compounds
MSC-14669 B76-10066 04
Specific-ion electrodes for measuring Ag ions
MSC-14906 B76-10068 04
Abrasion-resistant coatings for plastic surfaces
ARC-10915 B76-10201 04
Vapor corrosion inhibitors
M-FS-19232 B76-10206 04
Flame-resistant elastomeric polymers
MSC-16078 B76-10357 04
Parylene coating for circuit components
M-FS-23450 B76-10583 08

PROTON IRRADIATION

- Proton tissue dose
LANGLEY-11802 B76-10078 05

PSEUDONOISE

- PN ranging/telemetry transmission
GSFC-12017 B76-10323 02
All-digital sequence correlator
NPO-13737 B76-10468 01

PSYCHROMETERS

- Relative humidity from psychrometric data
FRC-10108 B76-10285 09
Quartz-crystal-oscillator hygrometer
GSFC-12153 B76-10349 03

PUBLIC ADDRESS SYSTEMS

- Oral annunciator with programmable vocabulary
MSC-14798 B76-10326 02

PULSE AMPLITUDE

- Pulse amplitude discriminator threshold calibration
GSFC-11912 B76-10023 02

PULSE CODE MODULATION

- Unbalanced quadrature demodulator
MSC-14840 B76-10161 02
Flexible high-speed instrumentation system
FRC-10110 B76-10483 02

PULSE COMMUNICATION

- Long binary frame sync words
NPO-13727 B76-10163 02
Doppler extraction with a digital VCO
MSC-14814 B76-10452 01

PULSE FREQUENCY MODULATION

- Digital varying-frequency generator
MSC-16331 B76-10446 01

PULSED LASERS

- Two-wavelength dye laser
LANGLEY-12012 B76-10170 03
Stabilized Nd YAG laser output
GSFC-11571 B76-10335 03
Efficient copper-vapor pulsed laser
NPO-13449 B76-10341 03
Spatially-coherent coupled semiconductor lasers
M-FS-23396 B76-10500 03
Spatial filter for Q-switched laser
LEWIS-12164 B76-10501 03

PUMPS

- Atmosphere-generating system
MSC-14713 B76-10389 06
Cavitating performance of pumping machinery
LEWIS-12423 B76-10394 06
Low-pressure-gas sampling pump
ARC-10941 B76-10573 07

PUSH-PULL AMPLIFIERS

- Deflection amplifier for image dissectors
NPO-13079 B76-10449 01

PYROLYSIS

- Determining total carbon in hydrazine
KSC-11022 B76-10521 04

PYROLYTIC MATERIALS

- Improved high-temperature heater with stabilized-zirconia elements
M-FS-23351 B76-10221 06

PROPHORIC MATERIALS

- Flame-resistant elastomeric polymers
MSC-16078 B76-10357 04

Q**Q FACTORS**

- Reduction of acoustic losses by outgassing
MSC-15985 B76-10069 04

Q SWITCHED LASERS

- Spatial filter for Q-switched laser
LEWIS-12164 B76-10501 03

QUALITY CONTROL

- Pressure tube instrumentation
LEWIS-12539 B76-10101 06
Uniform solar cells
GSFC-11941 B76-10125 08
Computer-automated ultrasonic inspection system
M-FS-23338 B76-10217 06
Simplified explosive-weld evaluation
MSC-14654 B76-10228 06
Overhead tray for cable test system
MSC-19488 B76-10270 08
Fracture mechanics for weld acceptance
M-FS-23360 B76-10282 08
Graphical methods for variable sampling plans
MSC-19279 B76-10431 08
Nondestructive interior examination of moving parts
M-FS-23378 B76-10545 06

Ultrasonic monitoring of crack extension
LEWIS-12632 876-10547 06
Elastrostatic-discharge damage to semiconductors
LANGLEY-11739 876-10586 08

QUANTITATIVE ANALYSIS

Determination of trace amounts of POF3
LEWIS-10577 876-10356 04
Determining total carbon in hydrazine
KSC-11022 876-10521 04

QUARTZ LAMPS

High-temperature heating array
MSC-14287 876-10251 07

QUARTZ TRANSDUCERS

Quartz-crystal-oscillator hygrometer
GSFC-12153 876-10349 03

R**RACKS (FRAMES)**

Improved shelf for electronic modules
NPO-13158 876-10578 07

RADAR ANTENNAS

Duplexer switch
LANGLEY-11546 876-10448 01
Low-cost dual-frequency microwave antenna
MSC-16100 876-10462 01
Multifrequency broadband dual-polarized antenna
NPO-13866 876-10464 01

RADAR CORNER REFLECTORS

Thermal/vacuum testing of laser corner-cube retroreflectors
M-FS-23565 876-10549 06

RADAR TRACKING

Signal enhancement filters
MSC-14907 876-10453 01

RADIATION ABSORPTION

Determination of trace amounts of POF3
LEWIS-10577 876-10356 04
Differential-optoacoustic absorption detector
NPO-13759 876-10494 03

RADIATION COUNTERS

Pulse amplitude discriminator threshold calibration
GSFC-11912 876-10023 02

RADIATION DETECTORS

Improved collimator for imaging system
M-FS-22863 876-10038 03
Two-dimensional photon detector
M-FS-23325 876-10048 03
Microchannel detector array for X-rays and UV
M-FS-23324 876-10053 03
Measurement of rapidly-changing heating rates
LANGLEY-11380 876-10097 06
Uniform solar cells
GSFC-11941 876-10125 08
Pyroionic infrared detector
LANGLEY-11921 876-10204 04

RADIATION DISTRIBUTION

Field distribution in a thin lens
LANGLEY-11392 876-10179 03

RADIATION HAZARDS

Safety organizations and experts
LEWIS-12742 876-10598 09

RADIATION MEASURING INSTRUMENTS

Ultraviolet fire detector
M-FS-21577 876-10016 02
Measurement of rapidly-changing heating rates
LANGLEY-11380 876-10097 06
Self-calibrating radiometer
ARC-10811 876-10339 03
Temperature reference for microwave radiometer calibration
LANGLEY-11355 876-10503 03

RADIATION PYROMETERS

Temperature reference for microwave radiometer calibration
LANGLEY-11355 876-10503 03

RADIATION SHIELDING

Proton tissue dose
LANGLEY-11802 876-10078 05

RADIATION SOURCES

Calibration source for sensitive optical detectors
LANGLEY-11625 876-10036 03

RADIATIVE HEAT TRANSFER

Resistance heating elements with specific heating profiles
LEWIS-10719 876-10095 06
Measurement of rapidly-changing heating rates
LANGLEY-11380 876-10097 06
Solar thermal energy utilization A bibliography with abstracts
HQN-10900 876-10186 03
Heat pipe technology
HQN-10901 876-10233 06
Thermal network modeling handbook
MSC-14964 876-10236 06
Improved solar-energy collector
NPO-13813 876-10486 03

RADICALS

Counting digital filter
NPO-11821 876-10296 01

RADIO ALTIMETERS

Low-cost pressure-data encoder
NPO-13692 876-10303 01

RADIO FREQUENCY IMPEDANCE PROBES

Nondestructive inspection of multilayered insulation
M-FS-22191 876-10128 08

RADIO FREQUENCY SHIELDING

Wideband distribution amplifier
NPO-13256 876-10307 01

RADIO TRANSMISSION

A linear phase demodulator
GSFC-12018 876-10291 01

RADIO TRANSMITTERS

Tracking system for moving subjects
HQN-10880 876-10028 02

RADIOGRAPHY

Shadow mask for X-ray spectrometer
GSFC-12131 876-10348 03
Image intensification of developed photographs
M-FS-23461 876-10495 03

RADIOMETERS

Self-calibrating radiometer
ARC-10811 876-10339 03
Portable solar radiometer measures stack-plume effluents
LANGLEY-12123 876-10491 03
Temperature reference for microwave radiometer calibration
LANGLEY-11355 876-10503 03

RAMP FUNCTIONS

Signal enhancement filters
MSC-14907 876-10453 01

RANDOM NOISE

Design of redundant systems
MSC-16026 876-10383 06

RANDOM PROCESSES

Multivariate normal integration
M-FS-22867 876-10288 09

RANDOM VIBRATION

Peak-acceleration limiter
NPO-11940 876-10082 06

RANGE (EXTREMES)

Control system design
LEWIS-12556 876-10404 06

RANGE FINDERS

Video display synthesizer
MSC-14620 876-10052 03

RANGEFINDING

Laser-Doppler measurement of air turbulence
M-FS-23155 876-10031 03

RANKINE CYCLE

Solar heating and cooling performance
M-FS-23432 876-10235 06

RATIOMETERS

Direct-reading inductance meter
NPO-13792 876-10473 02

REACTION KINETICS

Rapid kinetics
LANGLEY-12140 876-10529 04

READOUT

Readout method for stored information
NPO-13243 876-10029 02

REAL TIME OPERATION

Microprogramming for real-time data acquisition
KSC-11027 876-10328 02

RECEIVERS

Receiver performance evaluator
NPO-13701 876-10324 02
Capacitively-coupled data receiver clipper stage
MSC-14989 876-10456 01

RECEPTION DIVERSITY

Subcarrier signal combiner for arrayed antennas
NPO-13723 876-10329 02

RECORDING INSTRUMENTS

A/D converter
LANGLEY-11319 876-10009 01
Two-dimensional photon detector
M-FS-23325 876-10048 03
Remote water-monitoring system
LANGLEY-11973 876-10365 05

REDUCTION (CHEMISTRY)

REDOX - electrochemical energy storage
LEWIS-12220 876-10070 04
Electrolyte cells measure oxygen fugacities
MSC-16089 876-10523 04

REELS

Recording-tape position sensor
GSFC-12056 876-10577 07

REENTRY

Impact of a solid body with water
M-FS-23512 876-10560 06

REFLECTANCE

Measurement of transient reflectance
M-FS-23160 876-10037 03
Low-reflectivity spectrally selective coating
GSFC-12114 876-10184 03

REFLECTOMETERS

Measurement of transient reflectance
M-FS-23160 876-10037 03
Vacuum-ultraviolet reflectometer
MSC-14995 876-10336 03

- Time-domain reflectometry for cable-fault isolation
KSC-10741 876-10377 06
- REFLECTORS**
Thermal/vacuum testing of laser corner-cube retroreflectors
M-FS-23565 876-10549 06
- REFRACTORY MATERIALS**
Thermal fatigue-and-oxidation-resistant alloy
LEWIS-12564 876-10061 04
Coatings for mullite insulation
LANGLEY-11150 876-10067 04
High-temperature heating array
MSC-14287 876-10251 07
Enamel for high-temperature superalloys
M-FS-22804 876-10358 04
- REFRACTORY METALS**
Containerless processing of tungsten
M-FS-23509 876-10422 08
- REFRIGERATORS**
Sublimator/evaporator heat sink
ARC-10912 876-10384 06
- REGISTERS (COMPUTERS)**
Hybrid digital-analog implementation of digital filters
NPO-11833 876-10299 01
Continuous-data FIFO bubble shift register
LANGLEY-11862 876-10443 01
- REINFORCEMENT (STRUCTURES)**
Cost saving synergistic shaft seal
LEWIS-12119 876-10081 06
Modular multipurpose panel support
MSC-19641 876-10421 08
- REINFORCING FIBERS**
Composite laminate warpape
LEWIS-12615 876-10355 04
Second-generation PMR polyimides
LEWIS-12738 876-10359 04
- RELIABILITY**
Prevention of design flaws in multicomputer systems
MSC-14920 876-10330 02
Input/output error analyzer
GSFC-12132 876-10610 09
- RELIABILITY ENGINEERING**
Pulse detector
MSC-16268 876-10557 06
Electrostatic-discharge damage to semiconductors
LANGLEY-11739 876-10586 08
- REMOTE CONSOLES**
Remote access of modem by digital control
GSFC-11943 876-10022 02
- REMOTE CONTROL**
Load-regulating latch
MSC-19535 876-10252 07
- REMOTE HANDLING**
Selective image enhancement
M-FS-23364 876-10021 02
Concentric-tube differential drive
M-FS-22707 876-10114 07
Infrared range sensor
ARC-10885 876-10475 02
- REMOTE SENSORS**
Light pipes for LED measurements
GSFC-11887 876-10034 03
Remote sensing of natural resources
HCN-10899 876-10238 06
Remote water-monitoring system
LANGLEY-11973 876-10365 05
Remote sensing of vegetation and soil
GSFC-11976 876-10490 03
- Remote moisture-content balance
ARC-11032 876-10492 03
Miniature-angular-position transducer
LANGLEY-11999 876-10555 06
CAMSP Classification and Mensuration Software Package
MSC-14979 876-10600 09
- REPLACING**
Jet engine stator-blade removal tool
MSC-16000 876-10420 07
- REPORTS**
Flat-conductor cable baseboard
M-FS-23141 876-10154 01
Manufacture of flat-conductor cable
M-FS-23121 876-10155 01
Installation of surface-mounted flat-conductor cable
M-FS-23266 876-10158 01
Vapor corrosion inhibitors
M-FS-19232 876-10206 04
Annealing strained alloy 718
M-FS-19242 876-10284 08
- RESCUE OPERATIONS**
Multiposition rescue litter
MSC-16148 876-10368 05
- RESIDUES**
Manual trash compactor
MSC-16039 876-10390 06
- RESISTANCE HEATING**
Resistance heating elements with specific heating profiles
LEWIS-10719 876-10095 06
- RESOLUTION**
Contrast enhancement of transparencies
GSFC-11989 876-10181 03
- RESONANCE TESTING**
Pump failure monitor
M-FS-23366 876-10219 06
- RESONANT VIBRATION**
Rous system
LANGLEY-12015 876-10215 06
- RESONATORS**
Band-elimination filter
M-FS-23303 876-10295 01
- RETICLES**
Visual projection reticle
ARC-10976 876-10590 08
- RETROREFLECTION**
Improved interferometer beam splitter
NPO-11932 876-10041 03
Thermal/vacuum testing of laser corner-cube retroreflectors
M-FS-23565 876-10549 06
- REYNOLDS EQUATION**
Swept wing aerodynamics
ARC-10790 876-10403 06
- REYNOLDS NUMBER**
Hot-wire probe
ARC-10900 876-10222 06
- RIBBONS**
RF shaping of silicon ribbon
M-FS-23424 876-10258 08
- RICCATI EQUATION**
Linear stochastic optimal control and estimation
LEWIS-12505 876-10134 09
Linear stochastic optimal control and estimation
LEWIS-12540 876-10607 09
- RING STRUCTURES**
Connector contact-ring bus
MSC-19480 876-10146 01
- RISK**
Estimation of spares
MSC-19469 876-10133 09
- RL CIRCUITS**
Composite stacked moly-permalloy cores
NPO-13578 876-10294 01
- ROCKET EXHAUST**
Atmospheric particle sampler
NPO-13396 876-10059 04
Thermal-radiation model
M-FS-23538 876-10562 06
- ROCKET THRUST**
Propellant side feed
LANGLEY-11082 876-10094 06
- ROLL FORMING**
Roll-forming tubes to header plates
LEWIS-10513 876-10130 08
- ROLLERS**
Heavy-duty mechanical sequencer
MSC-19536 876-10418 07
- ROLLING**
Metalworking method for composites
M-FS-23354 876-10132 08
- ROLLING CONTACT LOADS**
Vehicle load-equalization system
MSC-12466 876-10249 07
- ROTATING CYLINDERS**
Concentric-tube differential drive
M-FS-22707 876-10114 07
- ROTATING GENERATORS**
Low-voltage motor heater
KSC-10651 876-10304 01
Astronautic structures manual
M-FS-23547 876-10393 06
- ROTOR SPEED**
Miniature-angular-position transducer
LANGLEY-11999 876-10555 06
- ROTORS**
Predicting off-design performance of radial-inflow turbines
LEWIS-12500 876-10242 06
- RUBBER COATINGS**
Flame-resistant elastomeric polymers
MSC-16078 876-10357 04
- RUBY LASERS**
Spatial filter for Q-switched laser
LEWIS-12164 876-10501 03
- RUNGE-KUTTA METHOD**
Active optics simulation system
LANGLEY-12104 876-10512 03
- RUNWAY ALIGNMENT**
Crosswind landing-gear position indicator
LANGLEY-11941 876-10120 07
- RUSTING**
Vapor corrosion inhibitors
M-FS-19232 876-10206 04
- RUTHENIUM COMPOUNDS**
Catalytic oxidation of waste materials
MSC-14831 876-10354 04

S

SAFETY

- Safety organizations and experts
LEWIS-12742 876-10598 09
- SAFETY DEVICES**
Increased safety in mercury-containing devices
M-FS-23308 876-10013 01
Automatic fire/weather data station
ARC-10993 876-10160 02
Compressed air cylinder pallet
MSC-19217 876-10203 04
Overload-protector/fault-indicator circuit
NPO-13592 876-10308 01

- Majority-voted logic fail-sense circuit
NPO-13107 B76-10313 01
Inexpensive low-voltage solid-state alarm
LEWIS-12544 B76-10320 02
Safety brake for tape reels
GSFC-11960 B76-10412 07
NASA technology utilization house
LANGLEY-12134 B76-10570 07
- SAMPLERS**
Atmospheric particle sampler
NPO-13396 B76-10059 04
Portable wind sensitive directional air sampler
LEWIS-12743 B76-10489 03
- SAMPLING**
Field sampling fine-vacuum system
KSC-10596 B76-10118 07
Graphical methods for variable sampling plans
MSC-19279 B76-10431 08
- SANDWICH STRUCTURES**
3-D foam adhesive deposition
M-FS-22739 B76-10271 08
- SANITATION**
NASA technology utilization house
LANGLEY-12134 B76-10570 07
- SAPPHIRE**
Improved Einzel lenses
M-FS-23115 B76-10032 03
- SATELLITE ANTENNAS**
Active retrodirective antenna
NPO-13641 B76-10463 01
- SATELLITE ORBITS**
SANDTRACKS World map and stations predictions computer programs
GSFC-12099 B76-10190 03
- SATELLITE TRACKING**
SANDTRACKS World map and stations predictions computer programs
GSFC-12099 B76-10190 03
- SATURABLE REACTORS**
Fluorescent dimming ballast
MSC-14937 B76-10292 01
- SCALERS**
M-ary shift register
NPO-11868 B76-10011 01
- SCANNERS**
Readout method for stored information
NPO-13243 B76-10029 02
Photorefractive page composer
M-FS-23419 B76-10171 03
- SCATTERING**
Beam splitter/combiner
GSFC-12083 B76-10177 03
- SCATTEROMETERS**
Measuring scatter angle from mirrors
M-FS-23421 B76-10342 03
- SCHEDULING**
DORCA II Dynamic operations requirements and cost analysis program
HQN-10834 B76-10289 09
- SCRAP**
Manual trash compactor
MSC-16039 B76-10390 06
- SEA ICE**
All-weather ice information system
LEWIS-12638 B76-10018 02
- SEALERS**
Flexible-pile thermal sealant
MSC-19568 B76-10371 06
Hydrodynamic lubrication of face seals
LEWIS-12710 B76-10558 06
- SEALING**
Roll-forming tubes to header plates
LEWIS-10513 B76-10130 08
- Leak testing glass ampoules
LANGLEY-11988 B76-10551 06
- SEALS (STOPPERS)**
Hydrostatic lift-off seal
M-FS-21496 B76-10079 06
Improved cryogenic shaft seals
M-FS-19153 B76-10080 06
Cost saving synergistic shaft seal
LEWIS-12119 B76-10081 06
Split-ring seal
MSC-14304 B76-10247 07
Fraction collector for electrophoresis
M-FS-23459 B76-10352 04
Fundamentals of fluid sealing
LEWIS-12683 B76-10392 06
- SEARCH PROFILES**
Business capabilities file
NPO-13834 B76-10136 09
Library information retrieval system
NPO-14017 B76-10599 09
- SEATS**
Viscoelastic foam cushion
ARC-11089 B76-10525 04
- SEEBECK EFFECT**
Elimination of thermally generated EMF's on PC boards
MSC-16125 B76-10594 08
- SELECTIVITY**
Band-elimination filter
M-FS-23303 B76-10295 01
- SELF ALIGNMENT**
Servo corrects interferometer-mirror tilt
NPO-13687 B76-10502 03
- SEMICONDUCTING FILMS**
Improved microbridge Josephson devices
M-FS-23274 B76-10012 01
- SEMICONDUCTOR DEVICES**
Optical bias assembly
MSC-14412 B76-10051 03
Power-control switch
M-FS-23395 B76-10148 01
Faster X-ray analysis of semiconductor wafers
M-FS-23315 B76-10225 06
Multiple-bubble detector
LANGLEY-12043 B76-10444 01
Semiconductor ohmic contact
LANGLEY-11691 B76-10461 01
Electrostatic analysis of charge-coupled structures
M-FS-23507 B76-10472 01
Elastrostatic-discharge damage to semiconductors
LANGLEY-11739 B76-10586 08
- SEMICONDUCTOR LASERS**
Pulse transformer for GaAs laser
M-FS-23399 B76-10185 03
Crystal orientation for solid-state photolithography
LANGLEY-11940 B76-10582 08
- SEMICONDUCTORS (MATERIALS)**
RF shaping of silicon ribbon
M-FS-23424 B76-10258 08
IGFET/SOI fabrication method
M-FS-23312 B76-10259 08
- SENSITIVITY**
Optimal insensitive-controller synthesis
M-FS-21666 B76-10103 06
- SENSORS**
Sensor for analog speed controls
LEWIS-12597 B76-10020 02
Flexible high-speed instrumentation system
FRC-10110 B76-10483 02
- SENSORY PERCEPTION**
Measuring mandibular motions
ARC-10956 B76-10362 05
- SEPARATION**
Stripper for silicone polymers
MSC-19380 B76-10267 08
- SEPARATORS**
Fluid classifier and disseminator
HQN-10748 B76-10089 06
Integral fan/water separator
MSC-14756 B76-10119 07
Automated solvent concentrator
NPO-13068 B76-10198 04
Precolumn for extract concentration
NPO-13083 B76-10199 04
- SEQUENTIAL CONTROL**
Heavy-duty mechanical sequencer
MSC-19536 B76-10418 07
- SERVICE LIFE**
Chemiluminescent prediction of service life
MSC-16010 B76-10191 04
Repair of fused silica platens
MSC-19713 B76-10276 08
- SERVOCONTROL**
Stepping optical path difference in an interferometer
NPO-13569 B76-10033 03
- SERVOMOTORS**
Ironless-armature brushless motor
GSFC-11880 B76-10476 02
- SEWAGE**
Catalytic oxidation of waste materials
MSC-14831 B76-10354 04
Less-costly activated carbon for sewage treatment
NPO-13877 B76-10516 04
- SHAFTS (MACHINE ELEMENTS)**
Hydrostatic lift-off seal
M-FS-21496 B76-10079 06
Improved cryogenic shaft seals
M-FS-19153 B76-10080 06
Cable-load equalization system
MSC-17494 B76-10230 06
Split-ring seal
MSC-14304 B76-10247 07
- SHAKERS**
Fail-safe hydraulic shaker protection
NPO-13726 B76-10218 06
- SHAPERS**
Roll-forming tubes to header plates
LEWIS-10513 B76-10130 08
- SHEAR PROPERTIES**
Analysis of bonded joints
LANGLEY-11871 B76-10231 06
Dynamic load attenuator
MSC-17472 B76-10416 07
- SHEAR STRESS**
Analysis of bonded joints
LANGLEY-11871 B76-10231 06
- SHELL STABILITY**
Analysis of axisymmetric shell structure
LANGLEY-12059 B76-10398 06
Energy-absorbing attenuator
MSC-17473 B76-10419 07
General instability analysis
M-FS-23407 B76-10563 06
- SHELLS (STRUCTURAL FORMS)**
Analysis of axisymmetric shell structure
LANGLEY-12059 B76-10398 06
- SHIFT REGISTERS**
Control logic for successive-approximation A/D converters
NPO-11937 B76-10010 01
M-ary shift register
NPO-11868 B76-10011 01

Hybrid digital-analog implementation of digital filters
NPO-11833 B76-10299 01
Concatenated algebraic decoder
MSC-14058 B76-10325 02
Electrostatic analysis of charge-coupled structures
M-FS-23507 B76-10472 01

SHOCK ABSORBERS
Nomograph for castor-cushion design
MSC-17094 B76-10229 06
Vehicle load-equalization system
MSC-12466 B76-10249 07
Viscoelastic foam cushion
ARC-11089 B76-10525 04

SHOCK TUBES
Shock-tube driver
NPO-13528 B76-10090 06
Double-exposure holographic interferometer
NPO-13796 B76-10169 03

SHOCK WAVE INTERACTION
Shock interference patterns and heating
LANGLEY-11497 B76-10240 06

SHOCK WAVE PROFILES
Analytic numerical solutions for shock waves
ARC-10959 B76-10096 06

SHOCK WAVE PROPAGATION
Analytic numerical solutions for shock waves
ARC-10959 B76-10096 06
Double-exposure holographic interferometer
NPO-13796 B76-10169 03

SHOCK WAVES
Shock-tube driver
NPO-13528 B76-10090 06
Analytic numerical solutions for shock waves
ARC-10959 B76-10096 06
Shock interference patterns and heating
LANGLEY-11497 B76-10240 06

SHORT CIRCUITS
Majority-voted logic fail-sense circuit
NPO-13107 B76-10313 01

SHORT TAKEOFF AIRCRAFT
Gust alleviation for STOL aircraft
LANGLEY-11413 B76-10099 06

SHUTDOWNS
Reduction of computer power interruptions
MSC-16136 B76-10479 02

SIGNAL ANALYSIS
Computer-automated ultrasonic inspection system
M-FS-23338 B76-10217 06

SIGNAL DETECTION
Bit-error rates in optical communications
M-FS-23340 B76-10286 09
Hologram-reconstruction signal enhancement
M-FS-23104 B76-10343 03
Capacitively-coupled data receiver clipper stage
MSC-14989 B76-10456 01

SIGNAL DETECTORS
Unbalanced quadruphase demodulator
MSC-14840 B76-10161 02
Signal level detector
NPO-13272 B76-10310 01

SIGNAL ENCODING
Serial-data correlator/code translator
KSC-11025 B76-10454 01

SIGNAL MEASUREMENT
Instrumentation for measuring low-level currents/voltages
MSC-14855 B76-10480 02

SIGNAL PROCESSING
DC-to-DC conversion with voltage multipliers
LEWIS-12297 B76-10138 01
PN ranging/telemetry transmission
GSFC-12017 B76-10323 02
Signal processing and display for electrochemical data
LANGLEY-11922 B76-10327 02
Subcarrier signal combiner for arrayed antennas
NPO-13723 B76-10329 02
Flexible high-speed instrumentation system
FRC-10110 B76-10483 02

SIGNAL RECEPTION
Instrumentation for measuring low-level currents/voltages
MSC-14855 B76-10480 02

SIGNAL TO NOISE RATIOS
Receiver performance evaluator
NPO-13701 B76-10324 02
Subcarrier signal combiner for arrayed antennas
NPO-13723 B76-10329 02
Shadow mask for X-ray spectrometer
GSFC-12131 B76-10348 03
Fabrication of ultra-low-noise amplifier
GSFC-12186 B76-10596 08

SILICON
RF shaping of silicon ribbon
M-FS-23424 B76-10258 08

SILICON RADIATION DETECTORS
Solid-state particle detectors
GSFC-11785 B76-10142 01

SILICONE RESINS
Low-pressure low-temperature molding process
MSC-19778 B76-10425 08

SINE WAVES
Low-frequency sine wave hard-limiting technique
NPO-13230 B76-10309 01

SIZE DETERMINATION
Electrical-conduit sizing gage
MSC-19491 B76-10150 01
Precision measurement of changes in physical dimensions
M-FS-23527 B76-10543 06

SKIN (STRUCTURAL MEMBER)
General instability analysis
M-FS-23407 B76-10563 06

SLICING
Hot-wire tile removal tool
KSC-11043 B76-10433 08

SLOT ANTENNAS
Low-cost dual-frequency microwave antenna
MSC-16100 B76-10462 01

SLUDGE
Catalytic oxidation of waste materials
MSC-14831 B76-10354 04
Less-costly activated carbon for sewage treatment
NPO-13877 B76-10516 04

SMALL PERTURBATION FLOW
Introducing controlled matter into a fluid system
M-FS-24309 B76-10093 06

SMOKE ABATEMENT
Flame-resistant elastomeric polymers
MSC-16078 B76-10357 04

SMOKE TRAILS
Wingtip smoke generator
ARC-10905 B76-10373 06

SOILS
Remote sensing of vegetation and soil
GSFC-11976 B76-10490 03

SOLAR ARRAYS
Improved solar-energy collector
NPO-13813 B76-10486 03
Economical solar-heating for homes
LANGLEY-12135 B76-10571 07

SOLAR CELLS
Printed-circuit solar-cell array
M-FS-23128 B76-10007 01
Solar selective surfaces
LEWIS-12614 B76-10047 03
JPL solar power experiments
NPO-13461 B76-10098 06
Uniform solar cells
GSFC-11941 B76-10125 08
Solar cell electrical connections
LEWIS-12293 B76-10260 08
Terrestrial photovoltaic measurements workshop
LEWIS-12643 B76-10350 03
Reduced costs for solar-cell modules
LEWIS-12185 B76-10427 08
Universal solar-cell terminal
M-FS-23505 B76-10450 01

SOLAR COLLECTORS
Solar selective surfaces
LEWIS-12614 B76-10047 03
JPL solar power experiments
NPO-13461 B76-10098 06
Faceted solar energy collectors
MSC-12687 B76-10182 03
Solar thermal energy utilization A bibliography with abstracts
HQN-10900 B76-10186 03
Coating for solar panels
M-FS-23420 B76-10196 04
Solar concentrator/absorber
M-FS-23428 B76-10253 07
Horizontally-mounted solar collector
M-FS-23349 B76-10256 07
Solar heated and cooled office building
LEWIS-12512 B76-10395 06
Improved solar-energy collector
NPO-13813 B76-10486 03
Economical solar-heating for homes
LANGLEY-12135 B76-10571 07

SOLAR ENERGY
Printed-circuit solar-cell array
M-FS-23128 B76-10007 01
SESOP Program for solar-energy heating-systems analysis
MSC-14853 B76-10113 06
Faceted solar energy collectors
MSC-12687 B76-10182 03
Solar thermal energy utilization A bibliography with abstracts
HQN-10900 B76-10186 03
Proposed low-temperature solar engine
M-FS-23403 B76-10254 07
Improved solar-energy collector
NPO-13813 B76-10486 03

SOLAR ENERGY ABSORBERS
Solar selective surfaces
LEWIS-12614 B76-10047 03
JPL solar power experiments
NPO-13461 B76-10098 06
Coating for solar panels
M-FS-23420 B76-10196 04
Solar concentrator/absorber
M-FS-23428 B76-10253 07
Horizontally-mounted solar collector
M-FS-23349 B76-10256 07

- Universal solar-cell terminal
M-FS-23505 876-10450 01
Improved solar-energy collector
NPO-13813 876-10486 03
- SOLAR ENERGY CONVERSION**
Solar heating and cooling performance
M-FS-23432 876-10235 06
Solar concentrator/absorber
M-FS-23428 876-10253 07
Horizontally-mounted solar collector
M-FS-23349 876-10256 07
- SOLAR FLUX**
Terrestrial photovoltaic measurements workshop
LEWIS-12643 876-10350 03
- SOLAR GENERATORS**
JPL solar power experiments
NPO-13461 876-10098 06
Faceted solar energy collectors
MSC-12687 876-10182 03
Proposed low-temperature solar engine
M-FS-23403 876-10254 07
- SOLAR HEATING**
Solar heating and cooling performance
M-FS-23432 876-10235 06
Solar heated and cooled office building
LEWIS-12512 876-10395 06
NASA technology utilization house
LANGLEY-12134 876-10570 07
Economical solar-heating for homes
LANGLEY-12135 876-10571 07
- SOLAR ORBITS**
Development ephemeris number 96
NPO-14002 876-10507 03
- SOLAR PHYSICS**
Development ephemeris number 96
NPO-14002 876-10507 03
- SOLAR REFLECTORS**
Low-cost solar reflectors
NPO-13707 876-10123 08
- SOLAR SIMULATORS**
Terrestrial photovoltaic measurements workshop
LEWIS-12643 876-10350 03
- SOLDERED JOINTS**
Compound solder joints
LANGLEY-11444 876-10274 08
- SOLDERING**
Improved soldering iron tip
M-FS-19349 876-10145 01
Polishing gold and gold-alloy crystals
M-FS-22800 876-10263 08
- SOLDERS**
Improved soldering iron tip
M-FS-19349 876-10145 01
- SOLID PROPELLANTS**
Propellant side feed
LANGLEY-11082 876-10094 06
- SOLID SOLUTIONS**
Determining eutectic composition in metal alloys
LEWIS-12633 876-10520 04
- SOLID STATE DEVICES**
Solid-state particle detectors
GSFC-11785 876-10142 01
IGFET/SOI fabrication method
M-FS-23312 876-10259 08
Pulse detector
MSC-16268 876-10557 06
Electrostatic-discharge damage to semiconductors
LANGLEY-11739 876-10586 08
- SOLID SURFACES**
Optical profilometer
LANGLEY-11869 876-10338 03
- SOLOMON COMPUTERS**
Concatenated algebraic decoder
MSC-14058 876-10325 02
- SOLUBILITY**
Solvent for 1-phenyl-3-pyrazolidone in photography
GSFC-11992 876-10496 03
- SOLVENT EXTRACTION**
Automated solvent concentrator
NPO-13068 876-10198 04
Precolumn for extract concentration
NPO-13083 876-10199 04
- SOLVENTS**
Cleaning large tanks and gas bottles
MSC-14966 876-10430 09
Solvent for 1-phenyl-3-pyrazolidone in photography
GSFC-11992 876-10496 03
- SONIC BOOMS**
Shock interference patterns and heating
LANGLEY-11497 876-10240 06
- SORPTION**
Measuring trace dispersants in gas streams
ARC-10896 876-10374 06
- SOUND PRESSURE**
Acoustic-energy shaping of malleable metals
NPO-13802 876-10423 08
Acoustic testing of materials
LANGLEY-11659 876-10550 06
- SOUND PROPAGATION**
Impedance of curved ducts
LEWIS-12636 876-10237 06
- SOUND TRANSMISSION**
Attenuation of sound in ducts with acoustic treatment
LEWIS-12686 876-10226 06
Acoustic testing of materials
LANGLEY-11659 876-10550 06
- SOUND WAVES**
Impedance of curved ducts
LEWIS-12636 876-10237 06
- SOURCE PROGRAMS**
FORTRAN code-evaluation system
M-FS-23539 876-10604 09
- SPACECRAFT TRAJECTORIES**
GEODYN Orbital and geodetic parameter estimation
GSFC-12014 876-10396 06
- SPARE PARTS**
Estimation of spares
MSC-19469 876-10133 09
- SPARK PLUGS**
Electrostatic-discharge ignition
NPO-13798 876-10487 03
- SPATIAL FILTERING**
Spatially-coherent coupled semiconductor lasers
M-FS-23396 876-10500 03
Spatial filter for Q-switched laser
LEWIS-12164 876-10501 03
- SPECIFICATIONS**
Pressure tube instrumentation
LEWIS-12539 876-10101 06
- SPECTRA**
Color to black-and-white converter
MSC-12618 876-10346 03
- SPECTRAL RESOLUTION**
Improved interferometer beam splitter
NPO-11932 876-10041 03
Low-light-level integrating video system
M-FS-23288 876-10347 03
- SPECTROGRAPHS**
Inexpensive portable drug detector
ARC-10633 876-10534 05
- SPECTROMETERS**
Stepping optical path difference in an interferometer
NPO-13569 876-10033 03
Improved interferometer beam splitter
NPO-11932 876-10041 03
Optical devices
HQN-10891 876-10188 03
Rous system
LANGLEY-12015 876-10215 06
Laser particulate spectrometer
MSC-14969 876-10331 03
Tunable acoustical optical filter
NPO-13640 876-10340 03
Shadow mask for X-ray spectrometer
GSFC-12131 876-10348 03
Servo corrects interferometer-mirror tilt
NPO-13687 876-10502 03
- SPECTROPHOTOMETERS**
Miniature carbon dioxide sensor
MSC-16009 876-10344 03
Portable solar radiometer measures stack-plume effluents
LANGLEY-12123 876-10491 03
- SPECTROSCOPIC ANALYSIS**
Determination of trace amounts of POF3
LEWIS-10577 876-10356 04
Improved gas-pressure transducer
ARC-10639 876-10381 06
- SPECTROSCOPY**
Optics and lasers
HQN-10893 876-10187 03
A forward-scatter polarimeter for chemical analysis
NPO-13756 876-10334 03
- SPECULAR REFLECTION**
Beam splitter/combiner
GSFC-12083 876-10177 03
Low-reflectivity spectrally selective coating
GSFC-12114 876-10184 03
- SPEECH RECOGNITION**
Oral annunciator with programmable vocabulary
MSC-14798 876-10326 02
- SPEED CONTROL**
Sensor for analog speed controls
LEWIS-12597 876-10020 02
- SPEED INDICATORS**
Sensor for analog speed controls
LEWIS-12597 876-10020 02
- SPHERICAL TANKS**
Ultra-lightweight pressure vessels
MSC-14983 876-10266 08
- SPIN STABILIZATION**
Spin-rate control device
ARC-10884 876-10417 07
- SPlicing**
Electrical-splicing connector
M-FS-24254 876-10300 01
- SPLINE FUNCTIONS**
Math model of 3-D aircraft configuration
LANGLEY-12029 876-10400 06
Curvilinear bicubic-spline-fit interpolation
LANGLEY-11391 876-10434 09
Contouring randomly spaced data
LANGLEY-12044 876-10436 09
Active optics simulation system
LANGLEY-12104 876-10512 03
- SPOT WELDS**
Synchronized backside-weld follower
M-FS-24454 876-10272 08

SPRAY NOZZLES

Mixing ingredients in foam dispenser
M-FS-20607 B76-10592 08

SPRAYED COATINGS

Solventless intumescent coatings
ARC-10996 B76-10194 04
Coating for solar panels
M-FS-23420 B76-10196 04
Molecular beam generator
MSC-14996 B76-10353 04

SPRAYERS

Molecular beam generator
MSC-14996 B76-10353 04
Mixing ingredients in foam dispenser
M-FS-20607 B76-10592 08

SPRINGS (ELASTIC)

Vehicle load-equalization system
MSC-12466 B76-10249 07
Indicated mean-effective pressure
instrument
LEWIS-12661 B76-10542 06

SPUTTERING

Ultra-high-vacuum electrical
feedthrough
HQN-10799 B76-10005 01

STABILITY DERIVATIVES

Determining aircraft stability and control
derivatives
FRC-10109 B76-10402 06

STABILIZED PLATFORMS

Leveling apparatus for precision
instruments
ARC-10981 B76-10572 07

STAGNATION FLOW

Transient thermal analysis of fluid
systems
MSC-19502 B76-10401 06

STAINLESS STEELS

Combined joining process for dissimilar
metals A concept
MSC-19323 B76-10127 08
Diffusion brazing nickel-plated stainless
steel
MSC-19322 B76-10265 08
Brazing/Rebrazing process for CRES steel
MSC-19600 B76-10280 08
Stress-corrosion cracking due to
hydrazine
ARC-11093 B76-10526 04

STANDARDIZATION

Pressure tube instrumentation
LEWIS-12539 B76-10101 06

STANDARDS

Flat-conductor cable baseboard
M-FS-23141 B76-10154 01
Manufacture of flat-conductor cable
M-FS-23121 B76-10155 01
Installation of surface-mounted
flat-conductor cable
M-FS-23266 B76-10158 01

STAR TRACKERS

Anamorphic lens for tracking system
NPO-13062 B76-10046 03
Improved resolution for sensor arrays
NPO-13745 B76-10439 01

STATE VECTORS

Processing equations for state-space
models
LEWIS-12555 B76-10438 09

STATIC STABILITY

Analysis of axisymmetric shell structure
LANGLEY-12059 B76-10398 06

STATISTICAL ANALYSIS

Peak-acceleration limiter
NPO-11940 B76-10082 06
Multivariate normal integration
M-FS-22867 B76-10288 09

Design of redundant systems
MSC-16026 B76-10383 06
Astronautic structures manual
M-FS-23547 B76-10393 06
Transfer-function parameters
LEWIS-12612 B76-10605 09
Linear stochastic optimal control and
estimation
LEWIS-12540 B76-10607 09

STATISTICAL DISTRIBUTIONS

Math model of 3-D aircraft
configuration
LANGLEY-12029 B76-10400 06

STATISTICS

Birth/death process model
NPO-13616 B76-10213 05

STATOR BLADES

Jet engine stator-blade removal tool
MSC-16000 B76-10420 07

STATORS

Predicting off-design performance of
radial-inflow turbines
LEWIS-12500 B76-10242 06
Ironless-armature brushless motor
GSFC-11880 B76-10476 02

STEEL STRUCTURES

Stress-corrosion cracking due to
hydrazine
ARC-11093 B76-10526 04

STEELS

Large-diameter fasteners of CRES alloy
MSC-19313 B76-10250 07
Cleaning carbon steel
KSC-10689 B76-10275 08

STEREOTELEVISION

Video display synthesizer
MSC-14620 B76-10052 03

STIFFNESS

Relative stiffness of flat-conductor
cable
M-FS-23537 B76-10469 01

STIFFNESS MATRIX

General instability analysis
M-FS-23407 B76-10563 06

STIMULATED EMISSION DEVICES

Beam patterns of light-emitting diodes
GSFC-11890 B76-10040 03
Determination of radiative current in
LEDs
GSFC-12034 B76-10042 03
Beam splitter/combiner
GSFC-12083 B76-10177 03

STOCHASTIC PROCESSES

Demodulator aids synchronization
NPO-13605 B76-10164 02
Birth/death process model
NPO-13616 B76-10213 05
Linear stochastic optimal control and
estimation
LEWIS-12540 B76-10607 09

STORAGE STABILITY

Aseptic fluid-transfer system
NPO-13743 B76-10210 05

STORAGE TANKS

Cryogenic storage tank thermal analysis
MSC-19103 B76-10234 06
External heater for cryogenic vessels
MSC-14056 B76-10337 03

STRAIN GAGES

Graphic-to-digital conversion system
M-FS-24410 B76-10019 02
Rous system
LANGLEY-12015 B76-10215 06
ROUS bolt-tensioning monitor
LANGLEY-12016 B76-10216 06
In vivo bone-strain telemetry
ARC-11074 B76-10535 05

Prefabricated strain-gage connectors
MSC-19522 B76-10595 08

STRAPS

Controlled linear clamped/loader
GSFC-12105 B76-10432 08

STREAMS

Measuring trace dispersants in gas
streams
ARC-10896 B76-10374 06

STRESS (PHYSIOLOGY)

Accelerator for biomedical studies
ARC-10898 B76-10367 05

STRESS ANALYSIS

Fatigue life of spur and helical gear
sets
LEWIS-12596 B76-10224 06
Faster X-ray analysis of semiconductor
wafers
M-FS-23315 B76-10225 06
Analysis of bonded joints
LANGLEY-11871 B76-10231 06
Crack-growth analysis
M-FS-23320 B76-10243 06
Astronautic structures manual
M-FS-23547 B76-10393 06
Analysis of axisymmetric shell structure
LANGLEY-12059 B76-10398 06
SPAR Structural-performance analysis
and redesign
LANGLEY-12062 B76-10399 06
Relative stiffness of flat-conductor
cable
M-FS-23537 B76-10469 01

STRESS CORROSION CRACKING

Stress-corrosion cracking due to
hydrazine
ARC-11093 B76-10526 04

STRESS CYCLES

Mechanical loader for testing
composites
LEWIS-12432 B76-10548 06

STRESS FUNCTIONS

Analysis of bonded joints
LANGLEY-11871 B76-10231 06

STRESS MEASUREMENT

ROUS bolt-tensioning monitor
LANGLEY-12016 B76-10216 06
Relative stiffness of flat-conductor
cable
M-FS-23537 B76-10469 01

STRESS-STRAIN DIAGRAMS

Yield-pressure determination
MSC-14655 B76-10581 08

STRESS-STRAIN-TIME RELATIONS

Reliability of hybrid microcircuit
bonding
M-FS-23358 B76-10129 08

STRESSES

Transpose of finite-element data
MSC-19644 B76-10564 06

STRETCH FORMING

Forming hard aluminum in complex
shapes
MSC-19693 B76-10579 08

STRETCHERS

Multiposition rescue litter
MSC-16148 B76-10368 05

STRUCTURAL ANALYSIS

Astronautic structures manual
M-FS-23547 B76-10393 06
SPAR Structural-performance analysis
and redesign
LANGLEY-12062 B76-10399 06
General instability analysis
M-FS-23407 B76-10563 06

- Oblique orthographic projections and contour plots
 LANGLEY-11877 B76-10601 09
- STRUCTURAL DESIGN CRITERIA**
 Analysis of axisymmetric shell structure
 LANGLEY-12059 B76-10398 06
 Impact of a solid body with water
 M-FS-23512 B76-10560 06
 Transpose of finite-element data
 MSC-19644 B76-10564 06
- STRUCTURAL ENGINEERING**
 NASTRAN component-mode synthesis
 MSC-19632 B76-10104 06
- STRUCTURAL FAILURE**
 Crack-growth analysis
 M-FS-23320 B76-10243 06
 Fracture mechanics for weld acceptance
 M-FS-23360 B76-10282 08
- STRUCTURAL MEMBERS**
 Modular multipurpose panel support
 MSC-19641 B76-10421 08
- STRUCTURAL STABILITY**
 BUCRAP2
 LANGLEY-11696 B76-10111 06
- STRUCTURAL STRAIN**
 Stress-corrosion cracking due to hydrazine
 ARC-11093 B76-10526 04
- STRUCTURAL VIBRATION**
 Fail-safe hydraulic shaker protection
 NPO-13726 B76-10218 06
 Analysis of axisymmetric shell structure
 LANGLEY-12059 B76-10398 06
 Active optics simulation system
 LANGLEY-12104 B76-10512 03
- STUDS (STRUCTURAL MEMBERS)**
 Slotted bolts and studs for vacuum systems
 LEWIS-10391 B76-10407 07
- SUBLIMATION**
 Sublimator/evaporator heat sink
 ARC-10912 B76-10384 06
- SUBSONIC FLOW**
 Swept-tapered-wing aerodynamics
 LANGLEY-11701 B76-10112 06
 Stability of an elastic airplane
 ARC-11086 B76-10568 06
- SUBSTRATES**
 Polymer adhesives for hybrid circuits
 M-FS-23287 B76-10015 01
 Low-cost solar reflectors
 NPO-13707 B76-10123 08
 Transistor-to-substrate bond quality
 M-FS-21931 B76-10137 01
- SULFONATES**
 Solventless intumescent coatings
 ARC-10996 B76-10194 04
- SULFUR OXIDES**
 Portable solar radiometer measures stack-plume effluents
 LANGLEY-12123 B76-10491 03
- SUPERCONDUCTIVITY**
 Improved microbridge Josephson devices
 M-FS-23274 B76-10012 01
- SUPERCONDUCTORS**
 Superconductive neuristor R-junction
 HQN-10871 B76-10003 01
- SUPERHIGH FREQUENCIES**
 Waveguide-to-coax transition/low-pass filter
 NPO-13642 B76-10147 01
 Low-cost dual-frequency microwave antenna
 MSC-16100 B76-10462 01
- SUPERSONIC FLOW**
 Analytic numerical solutions for shock waves
 ARC-10959 B76-10096 06
 Shock interference patterns and heating
 LANGLEY-11497 B76-10240 06
 Stability of an elastic airplane
 ARC-11086 B76-10568 06
- SUPERSONIC NOZZLES**
 REJECT
 LEWIS-12375 B76-10110 06
- SUPERSONIC TEST APPARATUS**
 All-nickel hot-wire probe
 ARC-10911 B76-10379 06
- SUPPORTS**
 Exercise support for therapy
 LANGLEY-11975 B76-10074 05
 Multiposition rescue litter
 MSC-16148 B76-10368 05
 Modular multipurpose panel support
 MSC-19641 B76-10421 08
 Leveling apparatus for precision instruments
 ARC-10981 B76-10572 07
 Improved shelf for electronic modules
 NPO-13158 B76-10578 07
 Rigid cable support for blind installations
 MSC-19473 B76-10585 08
- SURFACE DEFECTS**
 Fatigue life of spur and helical gear sets
 LEWIS-12596 B76-10224 06
 Soldering high-impedance N-chrome wire
 M-FS-1457 B76-10264 08
 Monitor for optical-window contamination
 ARC-10947 B76-10345 03
- SURFACE FINISHING**
 Improved microbridge Josephson devices
 M-FS-23274 B76-10012 01
 Beam splitter/combiner
 GSFC-12083 B76-10177 03
 Solventless intumescent coatings
 ARC-10996 B76-10194 04
 Abrasion-resistant coatings for plastic surfaces
 ARC-10915 B76-10201 04
 Repair of fused silica platens
 MSC-19713 B76-10276 08
 Elimination of color rings on film negatives
 GSFC-12110 B76-10498 03
 Detection of surface impurities on processed metals
 MSC-19670 B76-10553 06
- SURFACE LAYERS**
 Detecting contamination on a metal surface
 M-FS-19260 B76-10552 06
- SURFACE PROPERTIES**
 Ellipsometer for measurement in ultrahigh vacuum
 M-FS-23130 B76-10035 03
 Measurement of transient reflectance
 M-FS-23160 B76-10037 03
 Passive thermal-control coatings
 M-FS-22794 B76-10071 04
 Vacuum-ultraviolet reflectometer
 MSC-14995 B76-10336 03
 Optical profilometer
 LANGLEY-11869 B76-10338 03
 Detecting contamination on a metal surface
 M-FS-19260 B76-10552 06
- Electric heating for metal surface hardening
 M-FS-19268 B76-10580 08
- SURFACE TEMPERATURE**
 Heat-transfer coefficients of pin-finned cylinders
 LEWIS-12557 B76-10554 06
 One-wire thermocouple
 MSC-16220 B76-10556 06
- SURFACE VEHICLES**
 Vehicle load-equalization system
 MSC-12466 B76-10249 07
- SURFACE WAVES**
 Holography with surface plasma waves
 M-FS-22040 B76-10039 03
- SURFACTANTS**
 Surfactant-assisted coal liquefaction
 NPO-13904 B76-10517 04
- SURVIVAL EQUIPMENT**
 Miniature emergency oxygen unit
 KSC-11011 B76-10539 05
- SUSPENDING (HANGING)**
 Vehicle load-equalization system
 MSC-12466 B76-10249 07
- SUSPENSION SYSTEMS (VEHICLES)**
 Vehicle load-equalization system
 MSC-12466 B76-10249 07
- SWAGING**
 Metalworking method for composites
 M-FS-23354 B76-10132 08
- SWEPTBACK WINGS**
 Swept-tapered-wing aerodynamics
 LANGLEY-11701 B76-10112 06
- SWIMMING**
 Hand fin for swimming
 M-FS-21632 B76-10122 07
- SWITCHING CIRCUITS**
 Power-control switch
 M-FS-23395 B76-10148 01
 A non saturating dc-to-dc parallel power converter
 GSFC-12047 B76-10290 01
 Toroidal converter core
 NPO-13413 B76-10293 01
 Majority-voted logic fail-sense circuit
 NPO-13107 B76-10313 01
 Solid-state RF switch
 NPO-13081 B76-10315 01
 Power supply with optical-isolator control
 HQN-10827 B76-10466 01
- SYNCHRONISM**
 Unbalanced quadruphase demodulator
 MSC-14840 B76-10161 02
 Tracking a phase-shift-keyed signal
 MSC-16170 B76-10481 02
- SYSTEM EFFECTIVENESS**
 Optimal insensitive-controller synthesis
 M-FS-21666 B76-10103 06
- SYSTEMS ANALYSIS**
 Input/output error analyzer
 GSFC-12132 B76-10610 09
- SYSTEMS ENGINEERING**
 Prevention of design flaws in multicomputer systems
 MSC-14920 B76-10330 02
 Design of redundant systems
 MSC-16026 B76-10383 06

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TANKS (CONTAINERS)

Cleaning large tanks and gas bottles
MSC-14966 B76-10430 09

TANTALUM

All-tantalum electrolytic capacitor
M-FS-23462 B76-10424 08

TAPE RECORDERS

Safety brake for tape reels
GSFC-11960 B76-10412 07
Recording-tape position sensor
GSFC-12056 B76-10577 07

TARGET SIMULATORS

Video display synthesizer
MSC-14620 B76-10052 03

TASK COMPLEXITY

Learning/cost-improvement curves
M-FS-23429 B76-10287 09

TEETH

Measuring mandibular motions
ARC-10956 B76-10362 05

TEFLON (TRADEMARK)

Fabrication and applications of electrets
M-FS-23437 B76-10429 08

TELECOMMUNICATION

Digital video image system
M-FS-23322 B76-10166 02
Advanced imaging communication system
NPO-13545 B76-10482 02

TELEMETRY

Long binary frame sync words
NPO-13727 B76-10163 02
Demodulator aids synchronization
NPO-13605 B76-10164 02
Microprogramed telemetry processor
ARC-11061 B76-10460 01
Flexible high-speed instrumentation system
FRC-10110 B76-10483 02
In vivo bone-strain telemetry
ARC-11074 B76-10535 05

TELEOPERATORS

Concentric-tube differential drive
M-FS-22707 B76-10114 07

TELESCOPES

Polishing technique for beryllium mirror
M-FS-22923 B76-10049 03
Optical alignment system
ARC-10932 B76-10178 03
Optical devices
HQN-10891 B76-10188 03
Measuring scatter angle from mirrors
M-FS-23421 B76-10342 03
Analysis of laser heterodyne communications
GSFC-12098 B76-10511 03
Active optics simulation system
LANGLEY-12104 B76-10512 03

TELETYPEWRITER SYSTEMS

Binary/BCD-to-ASCII data converter
GSFC-12044 B76-10322 02

TELEVISION CAMERAS

Remote, unattended forest fire detector
M-FS-21221 B76-10077 05
Color to black-and-white converter
MSC-12618 B76-10346 03
Thick-film preamplifier
NPO-13416 B76-10459 01

TELEVISION EQUIPMENT

Vidicon intensifier
NPO-11912 B76-10054 03
Analog-to-binary conversion of video data
GSFC-11918 B76-10165 02

TELEVISION SYSTEMS

Selective image enhancement
M-FS-23364 B76-10021 02

Serial-to-parallel color-TV converter
MSC-14844 B76-10027 02
Interactive imaging and data processing
NPO-13655 B76-10167 02
Advanced imaging communication system
NPO-13545 B76-10482 02
X-ray sensitive oblique imaging device
GSFC-11935 B76-10504 03

TELEVISION TRANSMISSION

Color to black-and-white converter
MSC-12618 B76-10346 03

TEMPER (METALLURGY)

Age-forming aluminum panels
MSC-12648 B76-10281 08
Forming hard aluminum in complex shapes
MSC-19693 B76-10579 08

TEMPERATURE CONTROL

Thermal insulation for high-temperature systems
GSFC-10954 B76-10064 04
Passive thermal-control coatings
M-FS-22794 B76-10071 04
Self-contained constant-temperature heat absorber
M-FS-22989 B76-10091 06
Measurement of rapidly-changing heating rates
LANGLEY-11380 B76-10097 06
Efficient low static-volume water heater
M-FS-22469 B76-10116 07
Thermal/acoustical insulation foam
MSC-14795 B76-10195 04
Improved insulation material
MSC-14642 B76-10197 04
Heat pipe technology
HQN-10901 B76-10233 06
Solar heating and cooling performance
M-FS-23432 B76-10235 06
NECAP NASA Energy-cost analysis program
LANGLEY-11888 B76-10239 06
Multilayer insulative systems
LANGLEY-12057 B76-10528 04
Liquid-cooled bra for cancer detection
ARC-11007 B76-10533 05
NASA technology utilization house
LANGLEY-12134 B76-10570 07
Economical solar-heating for homes
LANGLEY-12135 B76-10571 07

TEMPERATURE DISTRIBUTION

Multidimensional heat conduction
MSC-16159 B76-10509 03
Multilayer insulative systems
LANGLEY-12057 B76-10528 04

TEMPERATURE EFFECTS

Cyclical bidirectional rotary actuator
GSFC-11883 B76-10117 07
Thermoluminescence for forensic analysis
NPO-11607 B76-10192 04

TEMPERATURE MEASUREMENT

Self-contained constant-temperature heat absorber
M-FS-22989 B76-10091 06
Joule-Thomson data curves
KSC-10538 B76-10102 06
Automatic fire/weather data station
ARC-10993 B76-10160 02
One-wire thermocouple
MSC-16220 B76-10556 06

TEMPERATURE MEASURING**INSTRUMENTS**

Zero-angle helical coil
GSFC-10969 B76-10085 06

Measurement of rapidly-changing heating rates
LANGLEY-11380 B76-10097 06
Self-calibrating radiometer
ARC-10811 B76-10339 03
Temperature reference for microwave radiometer calibration
LANGLEY-11355 B76-10503 03

TEMPERATURE SENSORS

Remote, unattended, forest fire detector
M-FS-21221 B76-10077 05
Self-contained constant-temperature heat absorber
M-FS-22989 B76-10091 06
Measurement of rapidly-changing heating rates
LANGLEY-11380 B76-10097 06

TEMPERING

Electric heating for metal surface hardening
M-FS-19268 B76-10580 08

TEMPLATES

Electrical-conduit sizing gage
MSC-19491 B76-10150 01
Age-forming aluminum panels
MSC-12648 B76-10281 08

TENSILE PROPERTIES

Dynamic load attenuator
MSC-17472 B76-10416 07

TENSILE STRENGTH

Large-diameter fasteners of CRES alloy
MSC-19313 B76-10250 07
Annealing strained alloy 718
M-FS-19242 B76-10284 08

TENSOMETERS

Laser extensometer
M-FS-19259 B76-10030 03

TERMINAL GUIDANCE

Video display synthesizer
MSC-14620 B76-10052 03

TERRAIN

DAM - detection and mapping
MSC-16096 B76-10370 05

TERRAIN ANALYSIS

Remote sensing of vegetation and soil
GSFC-11976 B76-10490 03

TEST EQUIPMENT

Remote access of modem by digital control
GSFC-11943 B76-10022 02
Direct-reading inductance meter
NPO-13792 B76-10473 02

TEST FACILITIES

Solar heated and cooled office building
LEWIS-12512 B76-10395 06
Electrostatic-discharge damage to semiconductors
LANGLEY-11739 B76-10586 08

TEST STANDS

Overhead tray for cable test system
MSC-19488 B76-10270 08

THEODOLITES

Optical alignment system
ARC-10932 B76-10178 03

THERAPY

Exercise support for therapy
LANGLEY-11975 B76-10074 05
Manual dexterity evaluator
LANGLEY-12022 B76-10209 05
Short-range biotelemetry system
MSC-16011 B76-10369 05

THERMAL ABSORPTION

Self-contained constant-temperature heat absorber
M-FS-22989 B76-10091 06
Solar concentrator/absorber
M-FS-23428 B76-10253 07

- Sublimator/evaporator heat sink
ARC-10912 B76-10384 06
- THERMAL CONDUCTIVITY**
Faceted solar energy collectors
MSC-12687 B76-10182 03
Heat pipe technology
HQN-10901 B76-10233 06
- THERMAL CONDUCTORS**
Thermal-diode heat pipe
ARC-10997 B76-10223 06
- THERMAL CONTROL COATINGS**
Transparent and flame-retardant potting compounds
MSC-14669 B76-10066 04
Passive thermal-control coatings
M-FS-22794 B76-10071 04
Parylene coating for circuit components
M-FS-23450 B76-10583 08
- THERMAL CYCLING TESTS**
Battery-cell thermal test facility
M-FS-23040 B76-10124 08
- THERMAL ENERGY**
Faceted solar energy collectors
MSC-12687 B76-10182 03
Solar thermal energy utilization A bibliography with abstracts
HQN-10900 B76-10186 03
Proposed low-temperature solar engine
M-FS-23403 B76-10254 07
NASA technology utilization house
LANGLEY-12134 B76-10570 07
Economical solar-heating for homes
LANGLEY-12135 B76-10571 07
- THERMAL EXPANSION**
Laser extensometer
M-FS-19259 B76-10030 03
Vacuum-jacketed line spacer
MSC-14365 B76-10083 06
Zero-angle helical coil
GSFC-10969 B76-10085 06
Proposed low-temperature solar engine
M-FS-23403 B76-10254 07
Precision measurement of changes in physical dimensions
M-FS-23527 B76-10543 06
- THERMAL FATIGUE**
Comparative thermal fatigue resistance
LEWIS-12563 B76-10062 04
- THERMAL INSULATION**
Thermal insulation for high-temperature systems
GSFC-10954 B76-10064 04
Coatings for mullite insulation
LANGLEY-11150 B76-10067 04
Cryogenic storage tank thermal analysis
MSC-19103 B76-10234 06
External heater for cryogenic vessels
MSC-14056 B76-10337 03
Flexible-pile thermal sealant
MSC-19568 B76-10371 06
Fuel-cell powerplant insulation
MSC-16012 B76-10426 08
Multilayer insulative systems
LANGLEY-12057 B76-10528 04
- THERMAL PROTECTION**
Thermal insulation for high-temperature systems
GSFC-10954 B76-10064 04
Improved insulation material
MSC-14642 B76-10197 04
Multidimensional heat conduction
MSC-16159 B76-10509 03
- THERMAL RADIATION**
Measurement of rapidly-changing heating rates
LANGLEY-11380 B76-10097 06
- Self-calibrating radiometer
ARC-10811 B76-10339 03
Improved solar-energy collector
NPO-13813 B76-10486 03
Multidimensional heat conduction
MSC-16159 B76-10509 03
Thermal-radiation model
M-FS-23538 B76-10562 06
- THERMAL STABILITY**
High-temperature flat-conductor cable
M-FS-23451 B76-10144 01
- THERMAL STRESSES**
Comparative thermal fatigue resistance
LEWIS-12563 B76-10062 04
Improved high-temperature heater with stabilized-zirconia elements
M-FS-23351 B76-10221 06
Astronautic structures manual
M-FS-23547 B76-10393 06
- THERMAL VACUUM TESTS**
Thermal/vacuum testing of laser corner-cube retroreflectors
M-FS-23565 B76-10549 06
- THERMIONIC CONVERTERS**
Hybrid-mode thermionic converter
HQN-10876 B76-10056 03
- THERMOCOUPLES**
Measurement of rapidly-changing heating rates
LANGLEY-11380 B76-10097 06
One-wire thermocouple
MSC-16220 B76-10556 06
Aluminum transfer method for plating plastics
MSC-16221 B76-10593 08
- THERMODYNAMIC PROPERTIES**
Battery-cell thermal test facility
M-FS-23040 B76-10124 08
Transient thermal analysis of fluid systems
MSC-19502 B76-10401 06
Multidimensional heat conduction
MSC-16159 B76-10509 03
Electrolyte cells measure oxygen fugacities
MSC-16089 B76-10523 04
Multilayer insulative systems
LANGLEY-12057 B76-10528 04
Integral-matrix procedure for boundary-layer problems
M-FS-23348 B76-10608 09
Systems improved numerical differencing analyzer
MSC-13805 B76-10609 09
- THERMODYNAMICS**
Thermal network modeling handbook
MSC-14964 B76-10236 06
- THERMOELECTRIC MATERIALS**
Pyroionic infrared detector
LANGLEY-11921 B76-10204 04
- THERMOELECTRICITY**
Elimination of thermally generated EMF's on PC boards
MSC-16125 B76-10594 08
- THERMOGRAVIMETRY**
Experimental data for new fire-retardant materials
MSC-16022 B76-10361 04
- THERMOHYDRAULICS**
Transient thermal analysis of fluid systems
MSC-19502 B76-10401 06
- THERMOLUMINESCENCE**
Thermoluminescence for forensic analysis
NPO-11607 B76-10192 04
- Low-temperature thermoluminescence
NPO-11935 B76-10193 04
- THERMOPHYSICAL PROPERTIES**
Self-calibrating radiometer
ARC-10811 B76-10339 03
- THERMOPLASTICITY**
Voltage control for corona charging thermoplastics
M-FS-23102 B76-10043 03
- THERMOSETTING RESINS**
Low-pressure low-temperature molding process
MSC-19778 B76-10425 08
New diamine hardeners for epoxies
LANGLEY-11823 B76-10522 04
- THERMOVISCOELASTICITY**
Viscoelastic foam cushion
ARC-11089 B76-10525 04
- THICKNESS**
Myocardial wall-thickness transducer
NPO-13644 B76-10075 05
- THIN FILMS**
Ellipsometer for measurement in ultrahigh vacuum
M-FS-23130 B76-10035 03
Measurement of transient reflectance
M-FS-23160 B76-10037 03
Solar selective surfaces
LEWIS-12614 B76-10047 03
Faster X-ray analysis of semiconductor wafers
M-FS-23315 B76-10225 06
Hybrid thin-film amplifier
MSC-13975 B76-10314 01
Molecular beam generator
MSC-14996 B76-10353 04
Aluminum transfer method for plating plastics
MSC-16221 B76-10593 08
- THREE DIMENSIONAL MOTION**
Tracking system for moving subjects
HQN-10880 B76-10028 02
Concentric-tube differential drive
M-FS-22707 B76-10114 07
- THRESHOLD LOGIC**
Superconductive neuristor R-junction
HQN-10871 B76-10003 01
Pulse amplitude discriminator threshold calibration
GSFC-11912 B76-10023 02
Signal level detector
NPO-13272 B76-10310 01
- THRUST**
Propellant side feed
LANGLEY-11082 B76-10094 06
- THRUST MEASUREMENT**
Propellant side feed
LANGLEY-11082 B76-10094 06
- TIBIA**
In vivo bone-strain telemetry
ARC-11074 B76-10535 05
- TIGHTNESS**
High-torque open-end wrench
NPO-13541 B76-10405 07
- TILES**
Hot-wire tile removal tool
KSC-11043 B76-10433 08
- TIME DIVISION MULTIPLEXING**
Data system for multiplexed water-current meters
M-FS-23343 B76-10493 03
- TIMING DEVICES**
Signal processing and display for electrochemical data
LANGLEY-11922 B76-10327 02

- TIPS**
Improved soldering iron tip
M-FS-19349 B76-10145 01
- TITANIUM ALLOYS**
Machining titanium alloys
M-FS-23006 B76-10283 08
- TOOLS**
Roll-forming tubes to header plates
LEWIS-10513 B76-10130 08
Improved soldering iron tip
M-FS-19349 B76-10145 01
Tool removes brazed fittings
LANGLEY-10944 B76-10244 07
Rotary broaches
M-FS-23374 B76-10248 07
Method of removing drilling chips
M-FS-19235 B76-10262 08
Machining titanium alloys
M-FS-23006 B76-10283 08
High-torque open-end wrench
NPO-13541 B76-10405 07
Precision centering vise
KSC-11041 B76-10409 07
Hot-wire tile removal tool
KSC-11043 B76-10433 08
Flange weld pressure testing
M-FS-19292 B76-10546 06
Leveling apparatus for precision instruments
ARC-10981 B76-10572 07
- TOPOGRAPHY**
DAM - detection and mapping
MSC-16096 B76-10370 05
Remote sensing of vegetation and soil
GSFC-11976 B76-10490 03
Geodetic control net
NPO-13718 B76-10510 03
- TOROIDS**
Pulse transformer for GaAs laser
M-FS-23399 B76-10185 03
Toroidal converter core
NPO-13413 B76-10293 01
- TORQUE MOTORS**
Ironless-armature brushless motor
GSFC-11880 B76-10476 02
- TORQUERS**
Ironless-armature brushless motor
GSFC-11880 B76-10476 02
- TOUGHNESS**
Ultrasonic measurement of fracture toughness
LEWIS-12642 B76-10372 06
- TOURNIQUETS**
Interlocking butterfly tourniquet
MSC-19382 B76-10532 05
- TRACE CONTAMINANTS**
Measuring trace dispersants in gas streams
ARC-10896 B76-10374 06
- TRACKING (POSITION)**
Horizontally-mounted solar collector
M-FS-23349 B76-10256 07
Synchronized backside-weld follower
M-FS-24454 B76-10272 08
Independent trajectory determination system
GSFC-11923 B76-10569 06
- TRACKING FILTERS**
Charge-sensitive amplifier with notched frequency response
LANGLEY-11317 B76-10440 01
- TRACKING NETWORKS**
Tracking system for moving subjects
HQN-10880 B76-10028 02
- TRAINING SIMULATORS**
Multiplane binocular visual display system
ARC-10808 B76-10168 02
Video simulator with electronic ranging
MSC-14965 B76-10474 02
Full-color hybrid display
ARC-10903 B76-10477 02
- TRAJECTORY ANALYSIS**
GEODYN Orbital and geodetic parameter estimation
GSFC-12014 B76-10396 06
Independent trajectory determination system
GSFC-11923 B76-10569 06
- TRANSDUCERS**
Electro-optical liquid depth sensor
M-FS-22921 B76-10024 02
Hybrid-mode thermionic converter
HQN-10876 B76-10056 03
Myocardial wall-thickness transducer
NPO-13644 B76-10075 05
Measuring mandibular motions
ARC-10956 B76-10362 05
Disposable biomedical electrode
MSC-14623 B76-10363 05
Improved gas-pressure transducer
ARC-10639 B76-10381 06
In vivo bone-strain telemetry
ARC-11074 B76-10535 05
Miniature-angular-position transducer
LANGLEY-11999 B76-10555 06
Transducer bonding kit
MSC-19690 B76-10587 08
- TRANSFER FUNCTIONS**
Transfer-function parameters
LEWIS-12612 B76-10605 09
- TRANSFORMATIONS (MATHEMATICS)**
Transfer-function parameters
LEWIS-12612 B76-10605 09
- TRANSFORMERS**
Toroidal converter core
NPO-13413 B76-10293 01
Feedback arrangement for regenerative switches
NPO-13060 B76-10302 01
Diplexer switch
LANGLEY-11546 B76-10448 01
Transformer design tradeoffs
NPO-13755 B76-10470 01
- TRANSIENT LOADS**
DYNGEN
LEWIS-12506 B76-10108 06
- TRANSIENT OSCILLATIONS**
A nonsaturating dc-to-dc parallel power converter
GSFC-12047 B76-10290 01
- TRANSIENT RESPONSE**
Peak-acceleration limiter
NPO-11940 B76-10082 06
- TRANSISTOR CIRCUITS**
Power-control switch
M-FS-23395 B76-10148 01
- TRANSISTORS**
Transistor-to-substrate bond quality
M-FS-21931 B76-10137 01
- TRANSITION METALS**
Catalysts for low-energy aldehyde processes
NPO-13827 B76-10519 04
- TRANSMISSION**
Dielectric covered antennas
MSC-16186 B76-10471 01
- TRANSMISSION LINES**
Waveguide-to-coax transition/low-pass filter
NPO-13642 B76-10147 01
- Testing flat-conductor cable
M-FS-23174 B76-10151 01
Surface mounted flat-conductor cable
M-FS-223135 B76-10152 01
Temperature rise of installed FCC
M-FS-23127 B76-10153 01
Pulse transformer for GaAs laser
M-FS-23399 B76-10185 03
Wideband distribution amplifier
NPO-13256 B76-10307 01
Time-domain reflectometry for cable-fault isolation
KSC-10741 B76-10377 06
Effects of mismatch on group delay of microwave transmission
NPO-13863 B76-10478 02
- TRANSDUCERS**
Low-cost pressure-data encoder
NPO-13692 B76-10303 01
- TRANSVERSE WAVES**
Multifrequency, broadband, dual-polarized antenna
NPO-13866 B76-10464 01
- TRAYS**
Overhead tray for cable test system
MSC-19488 B76-10270 08
- TRIANGULATION**
Contouring randomly spaced data
LANGLEY-12044 B76-10436 09
- TRIGGER CIRCUITS**
Power supply with optical-isolator control
HQN-10827 B76-10466 01
- TRUNCATION ERRORS**
Guide for testing numerical-integration subroutines
NPO-11644 B76-10135 09
- TUNGSTEN**
Containerless processing of tungsten
M-FS-23509 B76-10422 08
- TUNING**
Band-elimination filter
M-FS-23303 B76-10295 01
- TURBINE ENGINES**
REJECT
LEWIS-12375 B76-10110 06
Improved automobile gas turbine engine
LEWIS-12521 B76-10115 07
Design analysis of radial-inflow turbines
LEWIS-12684 B76-10561 06
- TURBINE INSTRUMENTS**
Improved automobile gas turbine engine
LEWIS-12521 B76-10115 07
Automated secondary standard for liquid flowmeters
LEWIS-12695 B76-10544 06
- TURBINE PUMPS**
Hydrostatic lift-off seal
M-FS-21496 B76-10079 06
- TURBINES**
Predicting off-design performance of radial-inflow turbines
LEWIS-12500 B76-10242 06
- TURBOFAN ENGINES**
DYNGEN
LEWIS-12506 B76-10108 06
- TURBOJET ENGINES**
DYNGEN
LEWIS-12506 B76-10108 06
- TURBOMACHINERY**
Improved automobile gas turbine engine
LEWIS-12521 B76-10115 07

TURBULENCE

- Gust alleviation for STOL aircraft
 LANGLEY-11413 B76-10099 06
 Outer flow and turbulence in boundary layers
 M-FS-23286 B76-10100 06

TURBULENT BOUNDARY LAYER

- Outer flow and turbulence in boundary layers
 M-FS-23286 B76-10100 06
 Shock interference patterns and heating
 LANGLEY-11497 B76-10240 06
 Integral-matrix procedure for boundary-layer problems
 M-FS-23348 B76-10608 09

TURBULENT FLOW

- Hot-wire probe
 ARC-10900 B76-10222 06
 Estimating aircraft states
 ARC-10969 B76-10567 06

TURBULENT WAKES

- Airport laser-Doppler
 M-FS-23423 B76-10174 03
 Trimmed noncoplanar planforms with minimum vortex drag
 LANGLEY-12121 B76-10566 06

U**ULTRASONIC MACHINING**

- Acoustic-energy shaping of malleable metals
 NPO-13802 B76-10423 08

ULTRASONIC TESTS

- Rous system
 LANGLEY-12015 B76-10215 06
 Computer-automated ultrasonic inspection system
 M-FS-23338 B76-10217 06
 Ultrasonic measurement of fracture toughness
 LEWIS-12642 B76-10372 06
 Ultrasonic monitoring of crack extension
 LEWIS-12632 B76-10547 06

ULTRASONIC WAVE TRANSDUCERS

- Ultraviolet fire detector
 M-FS-21577 B76-10016 02
 Biomedical ultrasonoscope
 ARC-10994 B76-10537 05

ULTRASONIC WELDING

- Solar cell electrical connections
 LEWIS-12293 B76-10260 08

ULTRASONICS

- Rous system
 LANGLEY-12015 B76-10215 06
 ROUS bolt-tensioning monitor
 LANGLEY-12016 B76-10216 06
 Computer-automated ultrasonic inspection system
 M-FS-23338 B76-10217 06
 Biomedical ultrasonoscope
 ARC-10994 B76-10537 05

ULTRAVIOLET FILTERS

- Pinhole diffraction filter
 GSFC-12120 B76-10333 03

ULTRAVIOLET RADIATION

- Ultraviolet fire detector
 M-FS-21577 B76-10016 02
 Microchannel detector array for X-rays and UV
 M-FS-23324 B76-10053 03

ULTRAVIOLET REFLECTION

- Vacuum-ultraviolet reflectometer
 MSC-14995 B76-10336 03

- Measuring scatter angle from mirrors
 M-FS-23421 B76-10342 03

ULTRAVIOLET SPECTROMETERS

- Portable solar radiometer measures stack-plume effluents
 LANGLEY-12123 B76-10491 03

UNDERCARRIAGES

- Vehicle load-equalization system
 MSC-12466 B76-10249 07

UNDERWATER ENGINEERING

- Hand fin for swimming
 M-FS-21632 B76-10122 07

UNIONS (CONNECTORS)

- Flexible fitting for fluid lines
 MSC-17780 B76-10277 08
 Soft seat A-N fitting for vacuum use
 LEWIS-10130 B76-10408 07

UREAS

- Extraction of urea and ammonium ion
 ARC-11064 B76-10515 04
 Membrane has high urea-rejection properties
 ARC-10980 B76-10518 04

URINALYSIS

- Signal processing and display for electrochemical data
 LANGLEY-11922 B76-10327 02
 Inexpensive portable drug detector
 ARC-10633 B76-10534 05
 Fast measurement of bacterial susceptibility to antibiotics
 GSFC-10246 B76-10536 05

UROLOGY

- Fast measurement of bacterial susceptibility to antibiotics
 GSFC-10246 B76-10536 05

V**V/STOL AIRCRAFT**

- Estimating aircraft states
 ARC-10969 B76-10567 06

VACUUM APPARATUS

- Ultra-high-vacuum electrical feedthrough
 HQN-10799 B76-10005 01
 Ellipsometer for measurement in ultrahigh vacuum
 M-FS-23130 B76-10035 03
 Soft seat A-N fitting for vacuum use
 LEWIS-10130 B76-10408 07
 Vacuum holddown fixture
 MSC-19666 B76-10589 08

VACUUM CHAMBERS

- Inexpensive leak-detector envelope
 LEWIS-11305 B76-10084 06
 Slotted bolts and studs for vacuum systems
 LEWIS-10391 B76-10407 07
 Multispecies transient simulator
 MSC-14862 B76-10527 04

VACUUM DEPOSITION

- Molecular beam generator
 MSC-14996 B76-10353 04

VACUUM MELTING

- Containerless processing of tungsten
 M-FS-23509 B76-10422 08

VACUUM PUMPS

- Field sampling fine-vacuum system
 KSC-10596 B76-10118 07

VACUUM SYSTEMS

- Slotted bolts and studs for vacuum systems
 LEWIS-10391 B76-10407 07

VALVES

- Constant-rate fluid-delivery system
 MSC-14905 B76-10214 06
 Gas boost compressor
 MSC-14757 B76-10415 07
 Long-life ball-valve design
 M-FS-19282 B76-10576 07

VAPOR DEPOSITION

- Triple-layer bubble-domain film
 LANGLEY-11755 B76-10006 01
 Molecular beam generator
 MSC-14996 B76-10353 04
 Containerless processing of tungsten
 M-FS-23509 B76-10422 08

VAPORIZING

- Liquid-retention canopy
 M-FS-24133 B76-10092 06

VAPORS

- Vapor corrosion inhibitors
 M-FS-19232 B76-10206 04

VARACTOR DIODE CIRCUITS

- Fabrication of ultra-low-noise amplifier
 GSFC-12186 B76-10596 08

VARIANCE

- Multivariate normal integration
 M-FS-22867 B76-10288 09

VEGETATION

- Remote sensing of vegetation and soil
 GSFC-11976 B76-10490 03

VEHICLE WHEELS

- Powered wheel for aircraft
 LANGLEY-12053 B76-10411 07
 Omnidirectional wheel
 M-FS-21309 B76-10575 07

VELOCITY DISTRIBUTION

- Laser-Doppler measurement of air turbulence
 M-FS-23155 B76-10031 03
 Standard aerosols for particle velocimeters
 M-FS-23075 B76-10050 03

VELOCITY MEASUREMENT

- Automated secondary standard for liquid flowmeters
 LEWIS-12695 B76-10544 06

VENTILATION

- Improved shelf for electronic modules
 NPO-13158 B76-10578 07

VENTING

- Venting for condensation in gas lines
 MSC-19621 B76-10109 06

VENTURI TUBES

- Cavitating performance of pumping machinery
 LEWIS-12423 B76-10394 06

VENUS ATMOSPHERE

- Borosilicate glass-to-Kovar tube bonding
 GSFC-12077 B76-10278 08

VERTICAL LANDING

- Air-cushion landing systems
 LANGLEY-11783 B76-10397 06

VIBRATION

- Analysis of axisymmetric shell structure
 LANGLEY-12059 B76-10398 06

VIBRATION MEASUREMENT

- NASTRAN component-mode synthesis
 MSC-19632 B76-10104 06
 Pump failure monitor
 M-FS-23366 B76-10219 06

VIBRATION TESTS

- Fail-safe hydraulic shaker protection
 NPO-13726 B76-10218 06

VIBRATIONAL SPECTRA

- Pump failure monitor
 M-FS-23366 B76-10219 06

SPAR Structural-performance analysis and redesign
 LANGLEY-12062 876-10399 06

VIBRATIONAL STRESS
 Fail-safe hydraulic shaker protection
 NPO-13726 876-10218 06

VIDEO COMMUNICATION
 Digital video image system
 M-FS-23322 876-10166 02

VIDEO DATA
 Selective image enhancement
 M-FS-23364 876-10021 02
 Serial-to-parallel color-TV converter
 MSC-14844 876-10027 02
 Analog-to-binary conversion of video data
 GSFC-11918 876-10165 02
 Digital video image system
 M-FS-23322 876-10166 02
 Interactive imaging and data processing
 NPO-13655 876-10167 02
 Low-light-level integrating video system
 M-FS-23288 876-10347 03
 Video simulator with electronic ranging
 MSC-14965 876-10474 02
 Advanced imaging communication system
 NPO-13545 876-10482 02

VIDEO EQUIPMENT
 Unichromatic-carrier color-TV system
 MSC-14683 876-10026 02
 Video display synthesizer
 MSC-14620 876-10052 03
 Low-light-level integrating video system
 M-FS-23288 876-10347 03
 Magnifying image intensifier
 GSFC-12010 876-10506 03

VIDICONS
 Vidicon intensifier
 NPO-11912 876-10054 03

VISCOELASTICITY
 Viscoelastic foam cushion
 ARC-11089 876-10525 04

VISCOUS DAMPING
 Fluid-film bearing damper
 LEWIS-11158 876-10378 06

VISCOUS FLOW
 Swept wing aerodynamics
 ARC-10790 876-10403 06

VISCOUS FLUIDS
 COMOC a finite-element algorithm for the Navier-Stokes equations
 LANGLEY-11480 876-10241 06
 Nucleation of electronic-crystal regions
 876-10524 04

VISUAL AIDS
 Multiplane binocular visual display system
 ARC-10808 876-10168 02

VISUAL PERCEPTION
 Visual projection reticle
 ARC-10976 876-10590 08

VITREOUS MATERIALS
 Low-cost solar reflectors
 NPO-13707 876-10123 08
 Enamel for high-temperature superalloys
 M-FS-22804 876-10358 04

VOCODERS
 Oral annunciator with programmable vocabulary
 MSC-14798 876-10326 02

VOICE COMMUNICATION
 Oral annunciator with programmable vocabulary
 MSC-14798 876-10326 02

VOICE DATA PROCESSING
 Oral annunciator with programmable vocabulary
 MSC-14798 876-10326 02

VOID RATIO
 Composite laminate warpage
 LEWIS-12615 876-10355 04

VOLT-AMPERE CHARACTERISTICS
 Determination of radiative current in LED's
 GSFC-12034 876-10042 03

VOLTAGE AMPLIFIERS
 DC-to-DC conversion with voltage multipliers
 LEWIS-12297 876-10138 01

VOLTAGE CONVERTERS (DC TO DC)
 DC-to-DC conversion with voltage multipliers
 LEWIS-12297 876-10138 01
 Compact reconditioner for Ni/Cd cells
 M-FS-23270 876-10141 01
 Free-space microwave-power transmission
 M-FS-23443 876-10162 02
 Inductorless voltage multiplier/converter
 NPO-13757 876-10445 01
 Low-power programmable high-voltage supply
 LANGLEY-11316 876-10458 01
 Active inrush-current limiter
 GSFC-11789 876-10467 01

VOLTAGE GENERATORS
 JPL solar power experiments
 NPO-13461 876-10098 06

VOLTAGE REGULATORS
 Voltage control for corona charging thermoplastics
 M-FS-23102 876-10043 03
 Battery single-cell protection system
 LEWIS-12039 876-10306 01
 Voltage-offset reduction in data transmitters
 MSC-14933 876-10321 02
 Low-power programmable high-voltage supply
 LANGLEY-11316 876-10458 01
 Power supply with optical-isolator control
 HQN-10827 876-10466 01

VOLTMETERS
 Battery single-cell protection system
 LEWIS-12039 876-10306 01

VON KARMAN EQUATION
 Impact of a solid body with water
 M-FS-23512 876-10560 06

VORTICES
 Standard aerosols for particle velocimeters
 M-FS-23075 876-10050 03
 Wingtip smoke generator
 ARC-10905 876-10373 06
 Estimating subsonic aerodynamic characteristics of complex planforms
 LANGLEY-11047 876-10565 06
 Trimmed noncoplanar planforms with minimum vortex drag
 LANGLEY-12121 876-10566 06

W

WALKING MACHINES
 An artificial leg for hip disarticulation
 ARC-10916 876-10541 05

WALL PRESSURE
 Yield-pressure determination
 MSC-14655 876-10581 08

WARNING SYSTEMS
 Overload-protector/fault-indicator circuit
 NPO-13592 876-10308 01
 Plug-in circuit monitor
 MSC-19455 876-10311 01
 Majority-voted logic fail-sense circuit
 NPO-13107 876-10313 01
 Inexpensive low-voltage solid-state alarm
 LEWIS-12544 876-10320 02
 Remote moisture-content balance
 ARC-11032 876-10492 03
 Caution and warning system
 MSC-16046 876-10531 05
 NASA technology utilization house
 LANGLEY-12134 876-10570 07

WARPAGE
 Composite laminate warpage
 LEWIS-12615 876-10355 04

WASHERS (SPACERS)
 Dynamic load attenuator
 MSC-17472 876-10416 07

WASTE DISPOSAL
 ESOP Version IV Energy systems optimization program
 MSC-14854 876-10106 06
 Manual trash compactor
 MSC-16039 876-10390 06

WASTE ENERGY UTILIZATION
 NECAP NASA Energy-cost analysis program
 LANGLEY-11888 876-10239 06
 Manual trash compactor
 MSC-16039 876-10390 06
 Energy conversion system
 NPO-13510 876-10485 03

WASTES
 Stopping small liquid leaks
 KSC-10667 876-10126 08
 Manual trash compactor
 MSC-16039 876-10390 06
 Hydrofoil controls outfall effluents in rivers and oceans
 LANGLEY-12045 876-10488 03

WATER CURRENTS
 Data system for multiplexed water-current meters
 M-FS-23343 876-10493 03

WATER FLOW
 Data system for multiplexed water-current meters
 M-FS-23343 876-10493 03

WATER POLLUTION
 Low-temperature thermoluminescence
 NPO-11935 876-10193 04
 Signal processing and display for electrochemical data
 LANGLEY-11922 876-10327 02
 Economical measurement of particle concentration
 GSFC-12088 876-10332 03
 Remote water-monitoring system
 LANGLEY-11973 876-10365 05
 Contamination monitoring of fluids
 KSC-11037 876-10382 06

WATER RECLAMATION
 NASA technology utilization house
 LANGLEY-12134 876-10570 07

WATER RESOURCES
 Remote sensing of natural resources
 HQN-10899 876-10238 06
 Remote sensing of vegetation and soil
 GSFC-11976 876-10490 03

WATER TEMPERATURE

Efficient low static-volume water heater
M-FS-22469 B76-10116 07

WATER TREATMENT

Extracting lignins from mill wastes
NPO-13847 B76-10514 04
Extraction of urea and ammonium ion
ARC-11064 B76-10515 04
Less-costly activated carbon for sewage treatment
NPO-13877 B76-10516 04

WATER VAPOR

Quartz-crystal-oscillator hygrometer
GSFC-12153 B76-10349 03

WATERPROOFING

Coatings for mullite insulation
LANGLEY-11150 B76-10067 04

WAVE DIFFRACTION

Pinhole diffraction filter
GSFC-12120 B76-10333 03

WAVE FRONT RECONSTRUCTION

Holography with surface plasma waves
M-FS-22040 B76-10039 03

WAVE FRONTS

Simplified explosive-weld evaluation
MSC-14654 B76-10228 06
Effects of mismatch on group delay of microwave transmission
NPO-13863 B76-10478 02

WAVE PROPAGATION

Impedance of curved ducts
LEWIS-12636 B76-10237 06
Dielectric covered antennas
MSC-16186 B76-10471 01
Effects of mismatch on group delay of microwave transmission
NPO-13863 B76-10478 02

WAVEFORMS

Automated EEG acquisition
MSC-16111 B76-10364 05

WAVEGUIDE ANTENNAS

Multifrequency broadband
dual-polarized antenna
NPO-13866 B76-10464 01

WAVEGUIDE FILTERS

Waveguide-to-coax transition/low-pass filter
NPO-13642 B76-10147 01

WAVEGUIDE TUNERS

Fabrication of ultra-low-noise amplifier
GSFC-12186 B76-10596 08

WAVEGUIDES

Waveguide-to-coax transition/low-pass filter
NPO-13642 B76-10147 01
Pulse transformer for GaAs laser
M-FS-23399 B76-10185 03
Effects of mismatch on group delay of microwave transmission
NPO-13863 B76-10478 02

WEATHER

All-weather ice information system
LEWIS-12638 B76-10018 02

WEATHER DATA RECORDERS

All-weather ice information system
LEWIS-12638 B76-10018 02
Automatic fire/weather data station
ARC-10993 B76-10160 02

WEATHER FORECASTING

All-weather ice information system
LEWIS-12638 B76-10018 02
Automatic fire/weather data station
ARC-10993 B76-10160 02
Relative humidity from psychrometric data
FRC-10108 B76-10285 09

WELD TESTS

Computer-automated ultrasonic inspection system
M-FS-23338 B76-10217 06
Fracture mechanics for weld acceptance
M-FS-23360 B76-10282 08

WELDED JOINTS

Flange weld pressure testing
M-FS-19292 B76-10546 06

WELDING

Improved photochemical etching of stainless steel
MSC-19728 B76-10268 08
Explosive-seam welding seals large pressure vessels
LANGLEY-12132 B76-10588 08

WELDING MACHINES

Synchronized backside-weld follower
M-FS-24454 B76-10272 08

WHEEL BRAKES

Powered wheel for aircraft
LANGLEY-12053 B76-10411 07

WHEELS

Powered wheel for aircraft
LANGLEY-12053 B76-10411 07

WINCHES

Cable-load equalization system
MSC-17494 B76-10230 06

WIND DIRECTION

Automatic fire/weather data station
ARC-10993 B76-10160 02
Wind velocity measurement
M-FS-23362 B76-10172 03
Portable, wind sensitive directional air sampler
LEWIS-12743 B76-10489 03

WIND MEASUREMENT

Wind velocity measurement
M-FS-23362 B76-10172 03
Wingtip smoke generator
ARC-10905 B76-10373 06

WIND PROFILES

Wingtip smoke generator
ARC-10905 B76-10373 06

WIND SHEAR

Airport laser-Doppler
M-FS-23423 B76-10174 03

WIND TUNNEL APPARATUS

Fast pressure-sensor system
LANGLEY-12003 B76-10087 06

WIND VANES

Spin-rate control device
ARC-10884 B76-10417 07

WIND VELOCITY MEASUREMENT

Automatic fire/weather data station
ARC-10993 B76-10160 02
Wind velocity measurement
M-FS-23362 B76-10172 03

WINDING

Metal structures with parallel pores
GSFC-10984 B76-10131 08

WING CAMBER

Trimmed noncoplanar planforms with minimum vortex drag
LANGLEY-12121 B76-10566 06

WING LOADING

Trimmed noncoplanar planforms with minimum vortex drag
LANGLEY-12121 B76-10566 06

WING OSCILLATIONS

Wingtip smoke generator
ARC-10905 B76-10373 06

WING PROFILES

Swept wing aerodynamics
ARC-10790 B76-10403 06

WINGS

WING Calculating lightning-induced voltages in electrical circuits within an aircraft wing
LEWIS-12108 B76-10351 03

WIRE

Electrical-cable design guide
M-FS-24280 B76-10157 01
Multiple-layer printed-wiring trace connector
LANGLEY-11709 B76-10305 01

WIRING

Plug-in light switches
M-FS-24183 B76-10001 01
Electrical-conduit sizing gage
MSC-19491 B76-10150 01
Testing flat-conductor cable
M-FS-23174 B76-10151 01
Surface mounted flat-conductor cable
M-FS-223135 B76-10152 01
Temperature rise of installed FCC
M-FS-23127 B76-10153 01
Electrical-splicing connector
M-FS-24254 B76-10300 01

WORK FUNCTIONS

Hybrid-mode thermionic converter
HQN-10876 B76-10056 03

WRENCHES

Hand and power tools
HQN-10892 B76-10257 07
High-torque open-end wrench
NPO-13541 B76-10405 07

X**X RAY APPARATUS**

Optics and lasers
HQN-10893 B76-10187 03
Containerless processing of tungsten
M-FS-23509 B76-10422 08
X-ray sensitive oblique imaging device
GSFC-11935 B76-10504 03

X RAY INSPECTION

Faster X-ray analysis of semiconductor wafers
M-FS-23315 B76-10225 06
Nondestructive interior examination of moving parts
M-FS-23378 B76-10545 06

X RAY SPECTROSCOPY

Shadow mask for X-ray spectrometer
GSFC-12131 B76-10348 03

X RAY TELESCOPES

Polishing technique for beryllium mirror
M-FS-22923 B76-10049 03

X RAYS

Microchannel detector array for X-rays and UV
M-FS-23324 B76-10053 03

X-Y PLOTTERS

Manual dexterity evaluator
LANGLEY-12022 B76-10209 05

Y**YAG LASERS**

Epitaxial growth of Ga_{1-x}Al_xAs on GaP
GSFC-11826 B76-10261 08

YIELD STRENGTH

Yield-pressure determination
MSC-14655 B76-10581 08

YTTRIUM-ALUMINUM GARNET

Stabilized Nd YAG laser output
GSFC-11571 B76-10335 03

Z**ZIRCONIUM COMPOUNDS**

Improved high-temperature heater with
stabilized-zirconia elements

M-FS-23351 B76-10221 06

ZONE MELTING

RF shaping of silicon ribbon

M-FS-23424 B76-10258 08

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PERSONAL AUTHOR INDEX

Index to NASA Tech Briefs

Issue 17

Personal Author Index

This index is arranged alphabetically by author. The Tech Brief title is listed followed by the originating Center number, e.g. GSFC-11918. The Tech Brief number, e.g. B76-10165, is followed by a two-digit number, e.g. 02, which designates the subject category.

A

- ABBOTT, J R**
Rigid cable support for blind installations
MSC-19473 B76-10585 08
- ACUNA, M H**
Analog-to-binary conversion of video data
GSFC-11918 B76-10165 02
- ADAMSON, M. J**
Stress-corrosion cracking due to hydrazine
ARC-11093 B76-10526 04
- ALBUS, J S**
Tracking system for moving subjects
HQN-10880 B76-10028 02
- ALDRICH, N**
Optical bias assembly
MSC-14412 B76-10051 03
- ALLEN, G P**
Hydrodynamic lubrication of face seals
LEWIS-12710 B76-10558 06
- ALLEN, M J**
Digital varying-frequency generator
MSC-16331 B76-10446 01
- ALLEN, R V**
Reliability of hybrid microcircuit bonding
M-FS-23358 B76-10129 08
- ALLEN, T H**
Vacuum-ultraviolet reflectometer
MSC-14995 B76-10336 03
Molecular beam generator
MSC-14996 B76-10353 04
- ALLRED, J W**
Economical solar-heating for homes
LANGLEY-12135 B76-10571 07
- ALSBERG, H**
Interactive imaging and data processing
NPO-13655 B76-10167 02
- ALSTON, W B**
Second-generation PMR polyimides
LEWIS-12738 B76-10359 04
- ANAGNOSTOU, E**
Reduced costs for solar-cell modules
LEWIS-12185 B76-10427 08
- ANDERSON, B H**
REJECT
LEWIS-12375 B76-10110 06
- ANDERSON, G E**
Flexible-pile thermal sealant
MSC-19568 B76-10371 06
- ANDERSON, L M**
Cavitating performance of pumping machinery
LEWIS-12423 B76-10394 06
- ANDERSON, T O**
Control logic for successive-approximation A/D converters
NPO-11937 B76-10010 01
Low-frequency sine wave hard-limiting technique
NPO-13230 B76-10309 01
Signal level detector
NPO-13272 B76-10310 01
- ANDERSON, W H**
Business capabilities file
NPO-13834 B76-10136 09
- ANGELE, W**
Manufacture of flat-conductor cable
M-FS-23121 B76-10155 01
- ANSELM, R T**
Extraction of urea and ammonium ion
ARC-11064 B76-10515 04
- ANSELMO, V J**
Multispectral imaging for medical diagnosis
NPO-13922 B76-10540 05
- APPLEBERRY, W T**
Load-regulating latch
MSC-19535 B76-10252 07
Heavy-duty mechanical sequencer
MSC-19536 B76-10418 07
- ARGOUD, M J**
Low-cost solar reflectors
NPO-13707 B76-10123 08
- ARMSTRONG, M G**
Independent trajectory determination system
GSFC-11923 B76-10569 06
- ARNETT, J C**
Aseptic fluid-transfer system
NPO-13743 B76-10210 05
- ASHBROOK, R L**
Determining eutectic composition in metal alloys
LEWIS-12633 B76-10520 04
- ASKINS, B S**
Image intensification of developed photographs
M-FS-23461 B76-10495 03
- ATWOOD, S O**
Electro-optical liquid depth sensor
M-FS-22921 B76-10024 02
- AUER, S O**
Remote sensing of vegetation and soil
GSFC-11976 B76-10490 03

B

- BAILEY, G C**
Thick-film preamplifier
NPO-13416 B76-10459 01
- BAKER, A J**
COMOC a finite-element algorithm for the Navier-Stokes equations
LANGLEY-11480 B76-10241 06
- BAKER, A W**
Prefabricated strain-gage connectors
MSC-19522 B76-10595 08
- BAKER, F A**
Nondestructive interior examination of moving parts
M-FS-23378 B76-10545 06
- BAKER, J T**
Occlusive-cuff controller
MSC-14836 B76-10207 05
- BAKER, L. L.**
BUCLAP2
LANGLEY-11696 B76-10111 06
- BAKER, R H**
Inductorless voltage multiplier/converter
NPO-13757 B76-10445 01
Power supply with optical-isolator control
HQN-10827 B76-10466 01
- BANNISTER, L H**
Inductorless voltage multiplier/converter
NPO-13757 B76-10445 01
- BARAJAS, S L**
Flexible fitting for fluid lines
MSC-17780 B76-10277 08
- BARRINGER, S R**
Economical solar-heating for homes
LANGLEY-12135 B76-10571 07
- BARTERA, R E**
Continuous HCl in air indicator
NPO-13474 B76-10060 04
- BARTOLI, F**
Flexible high-speed instrumentation system
FRC-10110 B76-10483 02
- BASHIN, S**
Universal solar-cell terminal
M-FS-23505 B76-10450 01
- BATISTA, R I**
Compound solder joints
LANGLEY-11444 B76-10274 08
- BAUCOM, R. M**
Lightweight orthotic appliances
LANGLEY-11918 B76-10076 05
- BAUER, A M**
COMOC a finite-element algorithm for the Navier-Stokes equations
LANGLEY-11480 B76-10241 06

BAUGH, B T

Calibration source for sensitive optical detectors
 LANGLEY-11625 876-10036 03

BAUMEISTER, P

Solar selective surfaces
 LEWIS-12614 876-10047 03

BAXTER, G I

Age-forming aluminum panels
 MSC-12648 876-10281 08

BAYNES, R G

Miniature emergency oxygen unit
 KSC-11011 876-10539 05

BEALL, J R

Elastrostatic-discharge damage to semiconductors
 LANGLEY-11739 876-10586 08

BEATTY, R W

Effects of mismatch on group delay of microwave transmission
 NPO-13863 876-10478 02

BEAUPRE, W M

Synchronized backside-weld follower
 M-FS-24454 876-10272 08

BECK, E J

Firefighter's breathing system
 MSC-14733 876-10208 05

BEHIMER, H

High-torque open-end wrench
 NPO-13541 876-10405 07

BEIMGRABEN, H W

Joule-Thomson data curves
 KSC-10538 876-10102 06

BELL, V L

Novel aminobenzyl and imidobenzyl benzenes
 LANGLEY-11843 876-10058 04
 New diamine hardeners for epoxies
 LANGLEY-11823 876-10522 04

BEMENT, L J

Explosive-seam welding seals large pressure vessels
 LANGLEY-12132 876-10588 08

BENJAMIN, R W

Cable-load equalization system
 MSC-17494 876-10230 06

BENNING, A C

Solar selective surfaces
 LEWIS-12614 876-10047 03

BERGERON, H P

Manual dexterity evaluator
 LANGLEY-12022 876-10209 05

BERKEBILE, M J

Parylene coating for circuit components
 M-FS-23450 876-10583 08

BERKMAN, R M

Aseptic fluid-transfer system
 NPO-13743 876-10210 05

BERTHOLD, J W, III

Precision measurement of changes in physical dimensions
 M-FS-23527 876-10543 06

BESER, N

Containerless processing of tungsten
 M-FS-23509 876-10422 08

BEUYUKIAN, C S

Combined joining process for dissimilar metals A concept
 MSC-19323 876-10127 08
 Diffusion brazing nickel-plated stainless steel
 MSC-19322 876-10265 08
 Repair of fused silica platens
 MSC-19713 876-10276 08

BEYER, R R

Vidicon intensifier
 NPO-11912 876-10054 03

BEZANT, K R

Low-voltage motor heater
 KSC-10651 876-10304 01

BHAT, B N

Growing crystals from eutectic melts
 M-FS-22926 876-10202 04

BIANCA, C

Crack-growth analysis
 M-FS-23320 876-10243 06

BIANCA, C J

General instability analysis
 M-FS-23407 876-10563 06

BIELMAN, L A

Vapor corrosion inhibitors
 M-FS-19232 876-10206 04

BIER, M

Fraction collector for electrophoresis
 M-FS-23459 876-10352 04

BIRCHENOUGH, A G

Sensor for analog speed controls
 LEWIS-12597 876-10020 02

Sustained-arc ignition system
 LEWIS-12444 876-10410 07

BISHOP, C M

Impact of a solid body with water
 M-FS-23512 876-10560 06

BIZON, P T

Thermal fatigue-and-oxidation-resistant alloy
 LEWIS-12564 876-10061 04

Comparative thermal fatigue resistance
 LEWIS-12563 876-10062 04

BLACK, D H

Horizontally-mounted solar collector
 M-FS-23349 876-10256 07

BLOMSETH, R A

Remote moisture-content balance
 ARC-11032 876-10492 03

BLOOM, W G

Precolumn for extract concentration
 NPO-13083 876-10199 04

BLUMRICH, J F

Omnidirectional wheel
 M-FS-21309 876-10575 07

BODLEY, C S

Impact response analyses
 M-FS-23335 876-10559 06

BOGHANI, A

Air-cushion landing systems
 LANGLEY-11783 876-10397 06

BOLINGER, P N

Coatings for mullite insulation
 LANGLEY-11150 876-10067 04

BOLLENBACHER, G

Induction motor analysis
 LEWIS-12687 876-10484 02

BOLSTAD, C A

Fracture mechanics for weld acceptance
 M-FS-23360 876-10282 08

BONNELL, R D

Contamination monitoring of fluids
 KSC-11037 876-10382 06

BORDEAUX, J

Miniature carbon dioxide sensor
 MSC-16009 876-10344 03

BOREK, R W, SR

Flexible high-speed instrumentation system
 FRC-10110 876-10483 02

BOWMAN, E L

Low-pressure low-temperature molding process
 MSC-19778 876-10425 08

BOYD, B A

Laser particulate spectrometer
 MSC-14969 876-10331 03

BRADFIELD, S P, III

Unbalanced quadruphase demodulator
 MSC-14840 876-10161 02

BREWER, S H

Analysis of laser heterodyne communications
 GSFC-12098 876-10511 03

BRIEY, J E

Vapor/liquid interface sensor
 MSC-12474 876-10220 06

BRINKLEY, K L

Multilayer insulative systems
 LANGLEY-12057 876-10528 04

BRITT, E J

Hybrid-mode thermionic converter
 HQN-10876 876-10056 03

BROUSSARD, P H, JR

Improved road handler
 M-FS-23233 876-10413 07

BROWELL, E V

Two-wavelength dye laser
 LANGLEY-12012 876-10170 03

BROWN, R L

Efficient low static-volume water heater
 M-FS-22469 876-10116 07

BROWN, R M

Digital video image system
 M-FS-23322 876-10166 02

Low-light-level integrating video system
 M-FS-23288 876-10347 03

BROWN, W C

Free-space microwave-power transmission
 M-FS-23443 876-10162 02

BRUX, A F

Liquid-retention canopy
 M-FS-24133 876-10092 06

BUCKMANN, P S

Hydrostatic lift-off seal
 M-FS-21496 876-10079 06

BURCH, J L

Improved road handler
 M-FS-23233 876-10413 07

BURCHER, E E

Optical profilometer
 LANGLEY-11869 876-10338 03

BURCHILL, R F

Pump failure monitor
 M-FS-23366 876-10219 06

BURNS, R H

Anamorphic lens for tracking system
 NPO-13062 876-10046 03

BUZZARD, R J

Ultrasonic monitoring of crack extension
 LEWIS-12632 876-10547 06

BYBEE, R L

Two-dimensional photon detector
 M-FS-23325 876-10048 03

Microchannel detector array for X-rays and UV
 M-FS-23324 876-10053 03

C**CALLAN, P R**

Soldering high-impedance Nichrome wire
 M-FS-1457 876-10264 08

CAMPEN, C F

Fraction-storage unit for drug-identification system
 NPO-13111 876-10200 04

- CAPPS, J D**
FORTRAN code-evaluation system
M-FS-23539 876-10604 09
- CAPTAIN, K M**
Air-cushion landing systems
LANGLEY-11783 876-10397 06
- CARDEN, J R**
Surface mounted flat-conductor cable
M-FS-223135 876-10152 01
Installation of surface-mounted
flat-conductor cable
M-FS-23266 876-10158 01
- CARLE, C E**
Safety brake for tape reels
GSFC-11960 876-10412 07
- CARLE, G C**
Separation of water from air samples
ARC-10890 876-10205 04
- CARPENTIER, R P**
Vidicon intensifier
NPO-11912 876-10054 03
- CARTER, M C**
Multivariate normal integration
M-FS-22867 876-10288 09
- CARUSO, S V**
Polymer adhesives for hybrid circuits
M-FS-23287 876-10015 01
Reliability of hybrid microcircuit
bonding
M-FS-23358 876-10129 08
- CASAD, T A**
Air-suspended dynamometer table
NPO-13794 876-10376 06
- CAVENESE, C E**
Electrical-conduit sizing gage
MSC-19491 876-10150 01
- CELLIER, A**
Manchester transition tracking loop
(MTTL)
MSC-14842 876-10319 02
- CHAMIS, C C**
Composite laminate warpage
LEWIS-12615 876-10355 04
- CHAMPINE, R A**
Crosswind landing-gear position
indicator
LANGLEY-11941 876-10120 07
- CHAN, I Y**
Library information retrieval system
NPO-14017 876-10599 09
- CHANDLER, G D**
Transient thermal analysis of fluid
systems
MSC-19502 876-10401 06
- CHAPPELLE, E W**
Quantitative bioluminescent detection of
bacteria
GSFC-12003 876-10073 05
Fast measurement of bacterial
susceptibility to antibiotics
GSFC-10246 876-10536 05
- CHARLES, J F**
Large-diameter fasteners of CRES alloy
MSC-19313 876-10250 07
- CHASE, W D**
Multiplane binocular visual display
system
ARC-10808 876-10168 02
Full-color hybrid display
ARC-10903 876-10477 02
- CHEIBE, H**
Dispensing a measured quantity of a
liquid
M-FS-21163 876-10574 07
- CHEN, T T**
Continuous-data FIFO bubble shift
register
LANGLEY-11862 876-10443 01
- CHENG, D Y**
Noise suppressor for turbopan-jet
engines
ARC-10812 876-10375 06
- CHERNOFF, R C**
Active retrodirective antenna
NPO-13641 876-10463 01
- CHI, C H**
Field distribution in a thin lens
LANGLEY-11392 876-10179 03
Curvilinear bicubic-spline-fit
interpolation
LANGLEY-11391 876-10434 09
- CHRISTENSEN, H E**
High-temperature heating array
MSC-14287 876-10251 07
- CIRLIN, E H**
Reduction of acoustic losses by
outgassing
MSC-15985 876-10069 04
- CLAUNCH, W C**
Thermal-radiation model
M-FS-23538 876-10562 06
- CLELAND, E L**
Aseptic fluid-transfer system
NPO-13743 876-10210 05
- CLEVELAND, G**
Hybrid thin-film amplifier
MSC-13975 876-10314 01
- CLIFF, W C**
Outer flow and turbulence in boundary
layers
M-FS-23286 876-10100 06
Wind velocity measurement
M-FS-23362 876-10172 03
- CLINGAN, B E**
Impact of a solid body with water
M-FS-23512 876-10560 06
- CODY, J C**
Solar heating and cooling performance
M-FS-23432 876-10235 06
- COFFEY, E W**
Airport laser-Doppler
M-FS-23423 876-10174 03
- COHEN, G A**
Analysis of axisymmetric shell structure
LANGLEY-12059 876-10398 06
- COHEN, S**
Analysis of laser heterodyne
communications
GSFC-12098 876-10511 03
- COLSON, J R**
Impact of a solid body with water
M-FS-23512 876-10560 06
- CONNER, W J**
Atmosphere-generating system
MSC-14713 876-10389 06
- CONNORS, T C, JR**
Multidimensional heat conduction
MSC-16159 876-10509 03
- COOK, T A**
Dispensing a measured quantity of a
liquid
M-FS-21163 876-10574 07
- COOPER, D W**
All-weather ice information system
LEWIS-12638 876-10018 02
- CORNISH, S D**
Ultraviolet fire detector
M-FS-21577 876-10016 02
- COSTANZA, D A**
Business capabilities file
NPO-13834 876-10136 09
- COSTEN, R C**
Hydrofoil controls outfall effluents in
rivers and oceans
LANGLEY-12045 876-10488 03
- COWAN, J J**
Holography with surface plasma waves
M-FS-22040 876-10039 03
- COX, B G**
High-temperature heating array
MSC-14287 876-10251 07
- COY, J J**
Fatigue life of spur and helical gear
sets
LEWIS-12596 876-10224 06
- CRAFT, D W**
Conical diffuser for fuel cells
MSC-14026 876-10255 07
- CRAIDON, C B**
Math model of 3-D aircraft
configuration
LANGLEY-12029 876-10400 06
- CRAVEN, C E**
Airport laser-Doppler
M-FS-23423 876-10174 03
- CREAGER, M**
Crack-growth analysis
M-FS-23320 876-10243 06
- CREASY, W K**
Vehicle load-equalization system
MSC-12466 876-10249 07
- CRIDER, C H**
Foldback current-limiting for hybrid
regulator
M-FS-22995 876-10301 01
- CROUCH, R K**
Solid-state turn-coordinator display
LANGLEY-12090 876-10451 01
- CRUM, P N**
Dynamic load attenuator
MSC-17472 876-10416 07
- CULLER, V H**
Myocardial wall-thickness transducer
NPO-13644 876-10075 05
- CUNNINGHAM, R E**
Fluid-film bearing damper
LEWIS-11158 876-10378 06
- CURRIER, R F**
Printed-circuit solar-cell array
M-FS-23128 876-10007 01
- CUSACK, J A**
Receiver performance evaluator
NPO-13701 876-10324 02

D

- DAHLM, W K**
Wind velocity measurement
M-FS-23362 876-10172 03
- DALTON, J W**
Frame for daylight photocopying
KSC-11026 876-10406 07
- DAME, J M**
High-torque open-end wrench
NPO-13541 876-10405 07
- DANIEL, I M**
Mechanical loader for testing
composites
LEWIS-12432 876-10548 06
- DANIELE, C J**
DYNGEN
LEWIS-12506 876-10108 06
- DAUN, M R**
Modular multipurpose panel support
MSC-19641 876-10421 08

- DAVIES, M E**
Geodetic control net
NPO-13718 B76-10510 03
- DAVIS, E E**
Determining total carbon in hydrazine
KSC-11022 B76-10521 04
- DAWSON, J H**
Liquid-retention canopy
M-FS-24133 B76-10092 06
- DAY, J L**
Specific-ion electrodes for measuring Ag ions
MSC-14906 B76-10068 04
Physician's modern 'Black Bag'
MSC-14936 B76-10212 05
- DEEPARK, A**
Standard aerosols for particle velocimeters
M-FS-23075 B76-10050 03
- DEERKOSKI, L F**
PN ranging/telemetry transmission
GSFC-12017 B76-10323 02
- DELANO, C B**
Polymeric foams stable at high temperatures
ARC-11008 B76-10065 04
- DELAPLAINE, R W**
Leveling apparatus for precision instruments
ARC-10981 B76-10572 07
- DELIONBACK, L M**
Learning/cost-improvement curves
M-FS-23429 B76-10287 09
- DEPALMA, V A**
Fluid classifier and disseminator
HQN-10748 B76-10089 06
- DETWEILER, H K**
Solid-state RF switch
NPO-13081 B76-10315 01
- DEYO, J N**
Portable wind sensitive directional air sampler
LEWIS-12743 B76-10489 03
- DIAMOND, D D**
Jet engine stator-blade removal tool
MSC-16000 B76-10420 07
- DIETHELM, M R**
Data-management and information system
NPO-13716 B76-10602 09
- DILLARD, G L**
Nomograph for castor-cushion design
MSC-17094 B76-10229 06
- DILLOW, C F**
Vacuum-ultraviolet reflectometer
MSC-14995 B76-10336 03
- DIMEFF, J**
Self-calibrating radiometer
ARC-10811 B76-10339 03
Measuring mandibular motions
ARC-10956 B76-10362 05
Improved gas-pressure transducer
ARC-10639 B76-10381 06
Inexpensive portable drug detector
ARC-10633 B76-10534 05
- DINKINS, M J**
General-purpose data link
M-FS-22714 B76-10025 02
- DIVECHA, A P**
Metalworking method for composites
M-FS-23354 B76-10132 08
- DIXON, W F**
Door latch with through-access hole
MSC-19634 B76-10414 07
- DOAK, T W**
Serial-to-parallel color-TV converter
MSC-14844 B76-10027 02
- DOTY, J P**
Polishing gold and gold-alloy crystals
M-FS-22800 B76-10263 08
- DOTY, L F**
Design of redundant systems
MSC-16026 B76-10383 06
- DUNCAN, B J**
Low-light-level integrating video system
M-FS-23288 B76-10347 03
- DUNMYER, D**
Computer-automated ultrasonic inspection system
M-FS-23338 B76-10217 06
- DUSTO, A**
Stability of an elastic airplane
ARC-11086 B76-10568 06
- DVORAK, F A**
Swept wing aerodynamics
ARC-10790 B76-10403 06
- E**
- EDWARDS, A J**
Meta-assembler
M-FS-23449 B76-10437 09
- EDWARDS, B B**
Airport laser-Doppler
M-FS-23423 B76-10174 03
- ELKINS, W E**
Liquid-cooled bra for cancer detection
ARC-11007 B76-10533 05
- ELLEMAN, D D**
Acoustic-energy shaping of meltable metals
NPO-13802 B76-10423 08
- ERICKSON, L L**
Stability of an elastic airplane
ARC-11086 B76-10568 06
- EVANS, G S**
Increased safety in mercury-containing devices
M-FS-23308 B76-10013 01
- EVANS, J M, JR**
Tracking system for moving subjects
HQN-10880 B76-10028 02
- EVANS, R M**
Integral-matrix procedure for boundary-layer problems
M-FS-23348 B76-10608 09
- EXTON, R J**
Portable solar radiometer measures stack-plume effluents
LANGLEY-12123 B76-10491 03
- F**
- FAKOLT, A J**
Inexpensive tags for tubes or cables
LEWIS-12676 B76-10584 08
- FALLS, L W**
Multivariate normal integration
M-FS-22867 B76-10288 09
- FARMER, G I**
Epitaxial growth of Ga_{1-x}Al_xAs on GaP
GSFC-11826 B76-10261 08
- FAY, T D**
Low-light-level integrating video system
M-FS-23288 B76-10347 03
- FELDSTEIN, C**
Myocardial wall-thickness transducer
NPO-13644 B76-10075 05
- FELL, D M**
Flexible-pile thermal sealant
MSC-19568 B76-10371 06
- FELLER, A**
Economical custom LSI arrays
M-FS-23262 B76-10004 01
- FELTNER, W R**
IGFET/SOI fabrication method
M-FS-23312 B76-10259 08
- FERRIS, D F**
Long-life ball-valve design
M-FS-19282 B76-10576 07
- FESLER, L W**
Multidimensional heat conduction
MSC-16159 B76-10509 03
- FICKEY, E W**
Field sampling fine-vacuum system
KSC-10596 B76-10118 07
- FIELDS, B**
Digital image-rectification system
GSFC-12156 B76-10513 03
- FINK, L C**
Systems improved numerical differencing analyzer
MSC-13805 B76-10609 09
- FISHER, D M**
Ultrasonic monitoring of crack extension
LEWIS-12632 B76-10547 06
- FISHER, R L**
Ironless-armature brushless motor
GSFC-11880 B76-10476 02
- FISHER, R R**
Self-contained constant-temperature heat absorber
M-FS-22989 B76-10091 06
- FITTES, B A**
Selective image enhancement
M-FS-23364 B76-10021 02
- FITZGERALD, F C**
Biased-circuit digital data line receiver
MSC-14967 B76-10457 01
- FLEETWOOD, C M, JR**
Elimination of color rings on film negatives
GSFC-12110 B76-10498 03
- FLOYD, S R**
Light pipes for LED measurements
GSFC-11887 B76-10034 03
Beam patterns of light-emitting diodes
GSFC-11890 B76-10040 03
- FOERSTER, G**
Pressure tube instrumentation
LEWIS-12539 B76-10101 06
- FONTECCHIO, P L**
Low-pressure-gas sampling pump
ARC-10941 B76-10573 07
- FORESTIERI, A F**
Reduced costs for solar-cell modules
LEWIS-12185 B76-10427 08
- FOSTER, C F**
Wideband distribution amplifier
NPO-13256 B76-10307 01
- FOSTER, J A**
Paddle-pin alignment test
KSC-10740 B76-10388 06
- FOSTER, J N**
Determination of trace amounts of POF3
LEWIS-10577 B76-10356 04
- FRANKS, H H**
Miniature emergency oxygen unit
KSC-11011 B76-10539 05
- FRAREY, J L**
Pump failure monitor
M-FS-23366 B76-10219 06
- FRAZIER, C**
Catalysts for low-energy aldehyde processes
NPO-13827 B76-10519 04

- FREEMAN, E. R., JR**
Elastrostatic-discharge damage to
semiconductors
LANGLEY-11739 B76-10586 08
- FROECHTENIGT, J. F**
Polishing technique for beryllium mirror
M-FS-22923 B76-10049 03
- FROST, J. D., JR**
Disposable biomedical electrode
MSC-14623 B76-10363 05
Automated EEG acquisition
MSC-16111 B76-10364 05
- FROST, R. T**
Containerless processing of tungsten
M-FS-23509 B76-10422 08
- FURUIKE, T**
Transpose of finite-element data
MSC-19644 B76-10564 06
- FYMAT, A. L**
A forward-scatter polarimeter for
chemical analysis
NPO-13756 B76-10334 03
- G**
- GAINER, P. A**
Manual dexterity evaluator
LANGLEY-12022 B76-10209 05
- GALLO, E. A**
Split-ring seal
MSC-14304 B76-10247 07
- GALOVICH, P**
Energy-absorbing attenuator
MSC-17473 B76-10419 07
- GALVAS, M. R**
Improved automobile gas turbine
engine
LEWIS-12521 B76-10115 07
- GANGE, R. A**
Permanent holographic storage medium
M-FS-22588 B76-10044 03
Electrode structure for uniform corona
discharge
M-FS-22617 B76-10045 03
- GANT, G**
A nonsaturating dc-to-dc parallel power
converter
GSFC-12047 B76-10290 01
- GARDNER, A. H**
Computer-automated ultrasonic
inspection system
M-FS-23338 B76-10217 06
- GASSAWAY, J. D**
Electrostatic analysis of charge-coupled
structures
M-FS-23507 B76-10472 01
- GAVALER, J. R**
Ultra-high-vacuum electrical
feedthrough
HQN-10799 B76-10005 01
- GEDNEY, R. T**
All-weather ice information system
LEWIS-12638 B76-10018 02
- GEORGE, P. K**
New passive replicator for bubble domain
devices
LANGLEY-11997 B76-10442 01
Multiple-bubble detector
LANGLEY-12043 B76-10444 01
- GERLACH, R. H**
DC drive system for cine/pulse
cameras
MSC-16085 B76-10497 03
- GEYSER, L. C**
Linear stochastic optimal control and
estimation
LEWIS-12505 B76-10134 09
- LEWIS-12505** B76-10134 09
- GIANDOMENICO, A**
High-torque open-end wrench
NPO-13541 B76-10405 07
- GIFFIN, C. E**
Double-focusing mass spectrometer
NPO-13663 B76-10183 03
- GIGANTE, J. R**
Solid-state particle detectors
GSFC-11785 B76-10142 01
- GILBREATH, W. P**
Stress-corrosion cracking due to
hydrazine
ARC-11093 B76-10526 04
- GILES, G. L**
Oblique orthographic projections and
contour plots
LANGLEY-11877 B76-10601 09
- GILLEY, C. R**
Stopping small liquid leaks
KSC-10667 B76-10126 08
- GILLIAM, D. M**
Paddle-pin alignment test
KSC-10740 B76-10388 06
- GILLON, W. A., JR**
Improved cryogenic shaft seals
M-FS-19153 B76-10080 06
Long-life ball-valve design
M-FS-19282 B76-10576 07
- GIORGINI, E. A**
Firefighter's breathing system
MSC-14733 B76-10208 05
- GLASSMAN, A. J**
Predicting off-design performance of
radial-inflow turbines
LEWIS-12500 B76-10242 06
Design analysis of radial-inflow turbines
LEWIS-12684 B76-10561 06
- GLOSS, B. B**
Estimating subsonic aerodynamic
characteristics of complex planforms
LANGLEY-11047 B76-10565 06
- GOLDSTEIN, R. J**
Noncontaminating method for visualizing
gas flow
LEWIS-12076 B76-10088 06
- GONZALEZ, R. C**
Selective image enhancement
M-FS-23364 B76-10021 02
- GOODRICH, W. D**
One-wire thermocouple
MSC-16220 B76-10556 06
Aluminum transfer method for plating
plastics
MSC-16221 B76-10593 08
- GOODWIN, M. A**
Code-usage analysis system
MSC-16214 B76-10603 09
- GORDON, L. H**
Microprogramed telemetry processor
ARC-11061 B76-10460 01
- GOSS, W. C**
Improved resolution for sensor arrays
NPO-13745 B76-10439 01
- GRAFF, S. M**
Reliability of hybrid microcircuit
bonding
M-FS-23358 B76-10129 08
- GRANA, D. C**
Remote water-monitoring system
LANGLEY-11973 B76-10365 05
- GRANT, C**
Video display synthesizer
MSC-14620 B76-10052 03
- GRAULING, C. H., JR**
Duplex switch
LANGLEY-11546 B76-10448 01
- GRAY, D. L**
Miniature-angular-position transducer
LANGLEY-11999 B76-10555 06
- GRAY, H. B**
Catalysts for low-energy aldehyde
processes
NPO-13827 B76-10519 04
- GREEN, B. E.**
Interlocking butterfly tourniquet
MSC-19382 B76-10532 05
- GREEN, G. E., JR**
All-tantalum electrolytic capacitor
M-FS-23462 B76-10424 08
- GREEN, K. A**
Multifrequency, broadband,
dual-polarized antenna
NPO-13866 B76-10464 01
- GREGORY, R. W**
Portable solar radiometer measures
stack-plume effluents
LANGLEY-12123 B76-10491 03
- GRIFFITH, J. S**
Automated solvent concentrator
NPO-13068 B76-10198 04
- GROOVER, J. L.**
Information retrieval and display system
M-FS-23510 B76-10606 09
- GROSS, C**
Fast pressure-sensor system
LANGLEY-12003 B76-10087 06
- GROSS, K. W**
Integral-matrix procedure for
boundary-layer problems
M-FS-23348 B76-10608 09
- GRUNBAUM, B. W**
Automatic multiple applicator
electrophoresis
ARC-10991 B76-10538 05
- GUBIN, R. S**
Miniature emergency oxygen unit
KSC-11011 B76-10539 05
- GUISINGER, J. E**
Analog data recording on MnBi film
NPO-13302 B76-10175 03
- GUMAN, W. J**
Propellant side feed
LANGLEY-11082 B76-10094 06
- GUMBS, R. W**
Coating for solar panels
M-FS-23420 B76-10196 04
- GUPTA, A**
Catalysts for low-energy aldehyde
processes
NPO-13827 B76-10519 04
- GUTHRIE, R. J**
Fuel-cell powerplant insulation
MSC-16012 B76-10426 08
- GUYAN, R. J**
NASTRAN component-mode synthesis
MSC-19632 B76-10104 06
- H**
- HAFTKA, R. T**
Analysis of axisymmetric shell structure
LANGLEY-12059 B76-10398 06
- HAINES, R. F**
Visual projection reticle
ARC-10976 B76-10590 08

HALBACH, C R

Improved high-temperature heater with stabilized-zirconia elements
M-FS-23351 876-10221 06

HALL, W J

Cavitating performance of pumping machinery
LEWIS-12423 876-10394 06

HALLAM, K L

X-ray sensitive oblique imaging device
GSFC-11935 876-10504 03

HALSTEAD, D W

BUCLAP2
LANGLEY-11696 876-10111 06

HAMM, R W

Contouring randomly spaced data
LANGLEY-12044 876-10436 09

HANKINS, J D

Surface mounted flat-conductor cable
M-FS-223135 876-10152 01
Temperature rise of installed FCC
M-FS-23127 876-10153 01
Flat-conductor cable baseboard
M-FS-23141 876-10154 01
Relative stiffness of flat-conductor cable
M-FS-23537 876-10469 01

HANNA, M F

Solid-state RF switch
NPO-13081 876-10315 01

HARDY, D H

Inexpensive low-voltage solid-state alarm
LEWIS-12544 876-10320 02

HARDY, W N

Temperature reference for microwave radiometer calibration
LANGLEY-11355 876-10503 03

HARNETT, L N

Monitor for optical-window contamination
ARC-10947 876-10345 03

HARRIGILL, W T, JR

DC-to-DC conversion with voltage multipliers
LEWIS-12297 876-10138 01

HARRIS, J M

Detecting contamination on a metal surface
M-FS-19260 876-10552 06

HARRIS, R F

Borosilicate glass-to-Kovar tube bonding
GSFC-12077 876-10278 08

HARRISON, E S

Polymeric foams stable at high temperatures
ARC-11008 876-10065 04

HART, R K

Improved Einzel lenses
M-FS-23115 876-10032 03

HARVEY, C A

Optimal insensitive-controller synthesis
M-FS-21666 876-10103 06

HASSELL, J A

Chemiluminescent prediction of service life
MSC-16010 876-10191 04

HATFIELD, J N

Data-management and information system
NPO-13716 876-10602 09

HAWKINS, R O

Ultra-lightweight pressure vessels
MSC-14983 876-10266 08

HAWRYLO, F Z

Low-threshold light-emitting-diode laser
LANGLEY-11477 876-10176 03
Semiconductor ohmic contact
LANGLEY-11691 876-10461 01

HAYES, J D

Passive thermal-control coatings
M-FS-22794 876-10071 04

HAYNES, D P

Remote water-monitoring system
LANGLEY-11973 876-10365 05

HEDGES, S R

Low-cost pressure-data encoder
NPO-13692 876-10303 01

HEFFRON, C J

Impact of a solid body with water
M-FS-23512 876-10560 06

HEFLINGER, L O

Spatial filter for Q-switched laser
LEWIS-12164 876-10501 03
Dual-purpose holocamera
LEWIS-12166 876-10505 03

HEIGHWAY, J E

All-weather ice information system
LEWIS-12638 876-10018 02

HEIMBUCH, A H

Inexpensive portable drug detector
ARC-10633 876-10534 05

HEISMAN, R M

Repair of fused silica platens
MSC-19713 876-10276 08

HENDERSON, B D

Miniature carbon dioxide sensor
MSC-16009 876-10344 03

HENDLER, D R

MINIVER Miniature version of real/ideal gas aero-heating and ablation computer program
M-FS-21951 876-10105 06

HENRY, E C

Nucleation of electronic-crystal regions
M-FS-23049 876-10524 04

HENRY, R D

Triple-layer bubble-domain film
LANGLEY-11755 876-10006 01

HENRY, R H

Reducing cold flow in elastomeric O-rings
M-FS-24336 876-10086 06

HEPPNER, D B

Electro-optical liquid depth sensor
M-FS-22921 876-10024 02

HERNDON, R H

Testing flat-conductor cable
M-FS-23174 876-10151 01

HERZIG, H

Low-reflectivity spectrally selective coating
GSFC-12114 876-10184 03

HEYMAN, J S

Rous system
LANGLEY-12015 876-10215 06
ROUS bolt-tensioning monitor
LANGLEY-12016 876-10216 06

HIGHLEY, K G

Compressed air cylinder pallet
MSC-19217 876-10203 04

HILBERT, E E

Advanced imaging communication system
NPO-13545 876-10482 02

HILL, J W

Infrared range sensor
ARC-10885 876-10475 02

HILLMAN, C E, JR

Disposable biomedical electrode
MSC-14623 876-10363 05

Automated EEG acquisition

MSC-16111 876-10364 05

HINK, G

Stability of an elastic airplane
ARC-11086 876-10568 06

HIRSCHBERG, M H

Resistance heating elements with specific heating profiles
LEWIS-10719 876-10095 06

HOBART, H F

Automated secondary standard for liquid flowmeters
LEWIS-12695 876-10544 06

HOCKENBERGER, R W

Interleaved cyclic codes
KSC-11040 876-10435 09

HODGES, B C

Meta-assembler
M-FS-23449 876-10437 09

HOFFLER, G W

Occlusive-cuff controller
MSC-14836 876-10207 05

HOFFMAN, C E

Introducing controlled matter into a fluid system
M-FS-24309 876-10093 06

HOLBROOK, R J

Parylene coating for circuit components
M-FS-23450 876-10583 08

HOLDEMAN, L B

Improved microbridge Josephson devices
M-FS-23274 876-10012 01

HOLDEN, C F

Flange weld pressure testing
M-FS-19292 876-10546 06

HOLDEN, R G

Elimination of thermally generated EMF s on PC boards
MSC-16125 876-10594 08

HOLLADAY, A M

Improved collimator for imaging system
M-FS-22863 876-10038 03

HOLLAHAN, J R

Abrasion-resistant coatings for plastic surfaces
ARC-10915 876-10201 04

HOLMES, A D

All-weather ice information system
LEWIS-12638 876-10018 02

HOLSTON, A A, JR

General instability analysis
M-FS-23407 876-10563 06

HOLT, J D

Manual dexterity evaluator
LANGLEY-12022 876-10209 05

HOLT, J W

Hot-wire tile removal tool
KSC-11043 876-10433 08

HONEYCUTT, J O

Polymer adhesives for hybrid circuits
M-FS-23287 876-10015 01

HORD, J

Cavitating performance of pumping machinery
LEWIS-12423 876-10394 06

HORSLEY, P H

Code-usage analysis system
MSC-16214 876-10603 09

HOUSLEY, R M

Reduction of acoustic losses by outgassing
MSC-15985 876-10069 04

HOUTE, F A

Vacuum-jacketed line spacer
MSC-14365 876-10083 06

- HOWARD, W H**
In vivo bone-strain telemetry
ARC-11074 876-10535 05
- HOWARTH, J T**
Flame-resistant elastomeric polymers
MSC-16078 876-10357 04
- HRUBY, R J**
Capacitive shaft-angle encoder
ARC-10897 876-10386 06
- HRUZAK, G A**
Meal system for the elderly
MSC-16062 876-10530 05
- HSU, G C**
Surfactant-assisted coal liquefaction
NPO-13904 876-10517 04
- HUANG, C C**
Airport laser-Doppler
M-FS-23423 876-10174 03
- HUEY, D C**
Manchester transition tracking loop (MTTL)
MSC-14842 876-10319 02
- HUFFAKER, R M**
Laser-Doppler measurement of air turbulence
M-FS-23155 876-10031 03
Wind velocity measurement
M-FS-23362 876-10172 03
- HUGGINS, C T**
Improved collimator for imaging system
M-FS-22863 876-10038 03
- HUMPHREY, M F**
Extracting lignins from mill wastes
NPO-13847 876-10514 04
- HURLEY, W J**
Tool removes brazed fittings
LANGLEY-10944 876-10244 07
- HURSTA, W**
Occlusive-cuff controller
MSC-14836 876-10207 05
- HUSTED, R R**
Extraction of urea and ammonium ion
ARC-11064 876-10515 04
- I**
- ICELAND, W F**
Synchronized backside-weld follower
M-FS-24454 876-10272 08
- ILIFF, K W**
Determining aircraft stability and control derivatives
FRC-10109 876-10402 06
- INGHAM, J D**
Low-temperature thermoluminescence
NPO-11935 876-10193 04
Less-costly activated carbon for sewage treatment
NPO-13877 876-10516 04
- IRICK, S C**
Exercise support for therapy
LANGLEY-11975 876-10074 05
Powered wheel for aircraft
LANGLEY-12053 876-10411 07
- J**
- JACOB, D S**
Constant-rate fluid-delivery system
MSC-14905 876-10214 06
- JACOBS, G L**
Removal of encapsulating materials
GSFC-11696 876-10143 01
- JACOBS, S F**
Precision measurement of changes in physical dimensions
M-FS-23527 876-10543 06
- JAGOW, R B**
Catalytic oxidation of waste materials
MSC-14831 876-10354 04
- JAHNSEN, V J**
Precolumn for extract concentration
NPO-13083 876-10199 04
- JAN, L**
A nonsaturating dc-to-dc parallel power converter
GSFC-12047 876-10290 01
- JANOCKO, M A**
Ultra-high-vacuum electrical feedthrough
HQN-10799 876-10005 01
- JIRBERG, R J**
All-weather ice information system
LEWIS-12638 876-10018 02
- JOHNSEN, E G**
Tracking system for moving subjects
HQN-10880 876-10028 02
- JOHNSON, C B**
X-ray sensitive oblique imaging device
GSFC-11935 876-10504 03
- JOHNSON, C C**
Membrane has high urea-rejection properties
ARC-10980 876-10518 04
- JOHNSON, J A**
Miniature emergency oxygen unit
KSC-11011 876-10539 05
- JOHNSON, R L**
Integral fan/water separator
MSC-14756 876-10119 07
- JOLLEY, J**
Low-cost solar reflectors
NPO-13707 876-10123 08
- JONES, A C**
Temperature reference for microwave radiometer calibration
LANGLEY-11355 876-10503 03
- K**
- KALAFUT, J S**
Vidicon intensifier
NPO-11912 876-10054 03
- KALLMAN, B J**
Leak testing glass ampoules
LANGLEY-11988 876-10551 06
- KALVINSKAS, J J**
Less-costly activated carbon for sewage treatment
NPO-13877 876-10516 04
- KAPUSTKA, R E**
Compact reconditioner for Ni/Cd cells
M-FS-23270 876-10141 01
- KATSANIS, T**
Improved automobile gas turbine engine
LEWIS-12521 876-10115 07
- KATZBERG, S J**
Optical profilometer
LANGLEY-11869 876-10338 03
- KEARNS, G B**
Proposed low-temperature solar engine
M-FS-23403 876-10254 07
- KEATHLEY, W H**
Low-onset-rate energy absorber
MSC-12279 876-10385 06
- KEESEY, M S W**
Development ephemeris number 96
NPO-14002 876-10507 03
- KEIR, A R**
Transducer bonding kit
MSC-19690 876-10587 08
- KELLEY, F G**
Universal solar-cell terminal
M-FS-23505 876-10450 01
- KELLY, W L**
Solid-state turn-coordinator display
LANGLEY-12090 876-10451 01
- KELLY, W L, IV**
Optical profilometer
LANGLEY-11869 876-10338 03
- KENKEL, J V**
Detection of surface impurities on processed metals
MSC-19670 876-10553 06
- KERLIN, E E**
Computer-automated ultrasonic inspection system
M-FS-23338 876-10217 06
- KESSLER, L L**
Power-control switch
M-FS-23395 876-10148 01
- KEYES, J W**
Shock interference patterns and heating
LANGLEY-11497 876-10240 06
- KHANDELWAL, G S**
Proton tissue dose
LANGLEY-11802 876-10078 05
- KIBLER, J F**
Contouring randomly spaced data
LANGLEY-12044 876-10436 09
- KICHAK, R A**
Active inrush-current limiter
GSFC-11789 876-10467 01
- KIEFLING, L**
SPAR Structural-performance analysis and redesign
LANGLEY-12062 876-10399 06
- KILLEN, H B**
Signal enhancement filters
MSC-14907 876-10453 01
- KIM, Y G**
Determining eutectic composition in metal alloys
LEWIS-12633 876-10520 04
- KING, R B**
Portable, wind sensitive directional air sampler
LEWIS-12743 876-10489 03
- KING, W L**
Information retrieval and display system
M-FS-23510 876-10606 09
- KINSER, D L**
Reliability of hybrid microcircuit bonding
M-FS-23358 876-10129 08
- KIRBY, C E**
Economical solar-heating for homes
LANGLEY-12135 876-10571 07
- KIRKPATRICK, J P**
'Thermal-diode' heat pipe
ARC-10997 876-10223 06
- KLEINBERG, L L**
UHF/microwave oscillator/amplifier
GSFC-12113 876-10455 01
- KLEIR, R**
FORTRAN code-evaluation system
M-FS-23539 876-10604 09
- KLIMAN, S J**
Ultrasonic monitoring of crack extension
LEWIS-12632 876-10547 06

KLINGMAN, E. E., III

- Calibration of image dissector tubes
M-FS-22208 876-10055 03
- KNOELL, A. C.**
Graphite-reinforced bone cement
NPO-13764 876-10211 05
- KOBAYASHI, H. S.**
Unbalanced quadruphase demodulator
MSC-14840 876-10161 02
Tracking a phase-shift-keyed signal
MSC-16170 876-10481 02
- KOBAYASHI, T.**
New passive replicator for bubble domain devices
LANGLEY-11997 876-10442 01
- KOCMOND, W. C.**
Fluid classifier and disseminator
HQN-10748 876-10089 06
- KOENIGSBERG, E.**
In vivo bone-strain telemetry
ARC-11074 876-10535 05
- KOFSKEY, M. G.**
Improved automobile gas turbine engine
LEWIS-12521 876-10115 07
- KOHMAN, W. E.**
Pointing control/roll positioning mechanism
M-FS-22809 876-10121 07
- KOLBLY, R. B.**
Low-cost pressure-data encoder
NPO-13692 876-10303 01
Direct-reading inductance meter
NPO-13792 876-10473 02
- KOSSON, R.**
'Thermal-diode' heat pipe
ARC-10997 876-10223 06
- KRAEMER, E.**
Fabrication of ultra-low-noise amplifier
GSFC-12186 876-10596 08
- KRAEMER, W.**
Video simulator with electronic ranging
MSC-14965 876-10474 02
- KRAMER, G. P.**
Simplified deflection-coil linearity testing
M-FS-23400 876-10180 03
- KRAMER, K.**
Roll-forming tubes to header plates
LEWIS-10513 876-10130 08
- KRAUSE, M. C.**
Wind velocity measurement
M-FS-23362 876-10172 03
Airport laser-Doppler
M-FS-23423 876-10174 03
- KRESSEL, H.**
Low-threshold light-emitting-diode laser
LANGLEY-11477 876-10176 03
Semiconductor ohmic contact
LANGLEY-11691 876-10461 01
- KROGH, F. T.**
Guide for testing numerical-integration subroutines
NPO-11644 876-10135 09
- KROSS, D. A.**
Impact of a solid body with water
M-FS-23512 876-10560 06
- KRUGER, R.**
Quartz-crystal-oscillator hygrometer
GSFC-12153 876-10349 03
- KUBACKI, R. M.**
Antireflection coating for plastic lenses
ARC-10983 876-10591 08
- KUBOKAWA, C. C.**
Viscoelastic foam cushion
ARC-11089 876-10525 04

KUNSELMAN, J. S.

- Computer-automated ultrasonic inspection system
M-FS-23338 876-10217 06

L**LADERMAN, A.**

- All-digital sequence correlator
NPO-13737 876-10468 01

LAGER, J. R.

- General instability analysis
M-FS-23407 876-10563 06

LAMAR, J. E.

- Estimating subsonic aerodynamic characteristics of complex planforms
LANGLEY-11047 876-10565 06
Trimmed noncoplanar planforms with minimum vortex drag
LANGLEY-12121 876-10566 06

LANE, A. L.

- Tunable acoustical optical filter
NPO-13640 876-10340 03

LAPINTA, C. K.

- Physician's modern 'Black Bag'
MSC-14936 876-10212 05

LAUVER, R. W.

- Solar selective surfaces
LEWIS-12614 876-10047 03

LAVIGNA, T.

- A nonsaturating dc-to-dc parallel power converter
GSFC-12047 876-10290 01

LAWRENCE, T. R.

- Wind velocity measurement
M-FS-23362 876-10172 03
Airport laser-Doppler
M-FS-23423 876-10174 03

LAWSON, D. D.

- Thermoluminescence for forensic analysis
NPO-11607 876-10192 04
Low-temperature thermoluminescence
NPO-11935 876-10193 04

LEE, A. L.

- Multispecies transient simulator
MSC-14862 876-10527 04
Thermal-radiation model
M-FS-23538 876-10562 06

LEE, R. D.

- Biomedical ultrasonoscope
ARC-10994 876-10537 05

LEE, S. H.

- Contrast enhancement of transparencies
GSFC-11989 876-10181 03

LEE, Y. S.

- Optimal insensitive-controller synthesis
M-FS-21666 876-10103 06

LEEB, W.

- Beam splitter/combiner
GSFC-12083 876-10177 03

LEEPER, J.

- Fabrication of ultra-low-noise amplifier
GSFC-12186 876-10596 08

LEHTINEN, B.

- Control system design
LEWIS-12556 876-10404 06

LEHTINEN, F. K. B.

- Linear stochastic optimal control and estimation
LEWIS-12505 876-10134 09
Linear stochastic optimal control and estimation
LEWIS-12540 876-10607 09

LEIBOWITZ, L. P.

- Shock-tube driver
NPO-13528 876-10090 06

LEMONS, C. R.

- 3-D foam adhesive deposition
M-FS-22739 876-10271 08

LEMONS, F. R.

- All-nickel hot-wire probe
ARC-10911 876-10379 06

LENETT, S. D.

- Tracking a phase-shift-keyed signal
MSC-16170 876-10481 02

LENT, W. E.

- Enamel for high-temperature superalloys
M-FS-22804 876-10358 04

LEVIN, H.

- Enamel for high-temperature superalloys
M-FS-22804 876-10358 04

LEVITT, B. K.

- Long binary frame sync words
NPO-13727 876-10163 02

LEVITT, I. M.

- Document restoration by computer techniques
HQN-10910 876-10597 09

LEWICKI, G. W.

- Readout method for stored information
NPO-13243 876-10029 02
Analog data recording on MnBi film
NPO-13302 876-10175 03

LEWIS, G. W.

- Myocardial wall-thickness transducer
NPO-13644 876-10075 05

LIBER, T.

- Mechanical loader for testing composites
LEWIS-12432 876-10548 06

LIBERTONE, C.

- Rotary broaches
M-FS-23374 876-10248 07

LICARI, J. J.

- Organic adhesives for hybrid microcircuits
M-FS-23370 876-10014 01

LIEBERMAN, S. L.

- Transparent and flame-retardant potting compounds
MSC-14669 876-10066 04

LIGON, J.

- Connector contact-ring bus
MSC-19480 876-10146 01

LIN, R. Y.

- Thermal/acoustical insulation foam
MSC-14795 876-10195 04

LINDSEY, J. F.

- Dielectric covered antennas
MSC-16186 876-10471 01

LINEBARIER, H. L.

- Ablative-filled honeycomb composites
LANGLEY-11180 876-10273 08

LINFORD, R. M. F.

- Ultraviolet fire detector
M-FS-21577 876-10016 02

Laser particulate spectrometer

- MSC-14969 876-10331 03

Vacuum-ultraviolet reflectometer

- MSC-14995 876-10336 03

Molecular beam generator

- MSC-14996 876-10353 04

LIPOMA, P. C.

- Unichromatic-carrier color-TV system
MSC-14683 876-10026 02

LITTLES, J. W.

- Solar heating and cooling performance
M-FS-23432 876-10235 06

- LIVINGSTON, F R**
Double-exposure holographic interferometer
NPO-13796 876-10169 03
- LOCKMAN, N L**
Electric heating for metal surface hardening
M-FS-19268 876-10580 08
- LOECHEL, L W**
Fracture mechanics for weld acceptance
M-FS-23360 876-10282 08
- LOGGINS, R W**
Testing flat-conductor cable
M-FS-23174 876-10151 01
- LOMBARDI, T**
Economical custom LSI arrays
M-FS-23262 876-10004 01
- LONG, J J**
Data-management and information system
NPO-13716 876-10602 09
- LONG, M J**
Exercise support for therapy
LANGLEY-11975 876-10074 05
Powered wheel for aircraft
LANGLEY-12053 876-10411 07
- LOPEZ, H**
Remote access of modem by digital control
GSFC-11943 876-10022 02
- LOPEZ, R W**
Self-contained constant-temperature heat absorber
M-FS-22989 876-10091 06
- LORENTZ, R**
Short-range biotelemetry system
MSC-16011 876-10369 05
- LOTGERING, G E**
Improved photochemical etching of stainless steel
MSC-19728 876-10268 08
- LOTT, D A**
Transducer bonding kit
MSC-19690 876-10587 08
- LOVE, A W**
Temperature reference for microwave radiometer calibration
LANGLEY-11355 876-10503 03
- LUDWIG, L P**
Cost saving synergistic shaft seal
LEWIS-12119 876-10081 06
Hydrodynamic lubrication of face seals
LEWIS-12710 876-10558 06
- LUM, H, JR**
Automatic fire/weather data station
ARC-10993 876-10160 02
Remote moisture-content balance
ARC-11032 876-10492 03
- LUNDGREN, R A**
Solid-state particle detectors
GSFC-11785 876-10142 01
- LUTUS, P**
Fluorescent dimming ballast
MSC-14937 876-10292 01
- LYON, T F**
Inexpensive leak-detector envelope
LEWIS-11305 876-10084 06
- MA, L N**
Manchester transition tracking loop (MTTL)
MSC-14842 876-10319 02
- MAAG, W L**
Solar heated and cooled office building
LEWIS-12512 876-10395 06
- MACCORMACK, R W**
Analytic numerical solutions for shock waves
ARC-10959 876-10096 06
- MAGNUSSON, G O**
Mechanical positioner
MSC-15817 876-10245 07
- MAHAN, R E**
Atmosphere-generating system
MSC-14713 876-10389 06
- MAINE, R E**
Determining aircraft stability and control derivatives
FRC-10109 876-10402 06
- MANDEL, G**
Safety organizations and experts
LEWIS-12742 876-10598 09
- MANDELL, A**
Rocking-motion sensor for the blind
MSC-14805 876-10366 05
- MANHARDT, P D**
COMOC a finite-element algorithm for the Navier-Stokes equations
LANGLEY-11480 876-10241 06
- MANSFELD, F B**
Purity test for copper-plating solutions
M-FS-19298 876-10360 04
Detection of surface impurities on processed metals
MSC-19670 876-10553 06
- MARCUS, H L**
Laser extensometer
M-FS-19259 876-10030 03
Detecting contamination on a metal surface
M-FS-19260 876-10552 06
Detection of surface impurities on processed metals
MSC-19670 876-10553 06
- MARGASON, R J**
Estimating subsonic aerodynamic characteristics of complex planforms
LANGLEY-11047 876-10565 06
- MARINELLI, D P**
Crystal orientation for solid-state photolithography
LANGLEY-11940 876-10582 08
- MARING, L A**
Modular multipurpose panel support
MSC-19641 876-10421 08
- MARK, H**
All-weather ice information system
LEWIS-12638 876-10018 02
- MARKE, M L**
Large-diameter fasteners of CRES alloy
MSC-19313 876-10250 07
- MARLOW, R E**
Concentric-tube differential drive
M-FS-22707 876-10114 07
- MARTIN, H L**
Hand fin for swimming
M-FS-21632 876-10122 07
- MARTIN, M**
Mask analysis program
M-FS-23431 876-10318 01
- MARX, W.**
RF shaping of silicon ribbon
M-FS-23424 876-10258 08
- MARZEK, R A**
Improved shelf for electronic modules
NPO-13158 876-10578 07
- MASON, M D**
A/D converter
LANGLEY-11319 876-10009 01
- Charge-sensitive amplifier with notched frequency response
LANGLEY-11317 876-10440 01
- MASTERS, G**
Data-management and information system
NPO-13716 876-10602 09
- MATSUMOTO, Y**
Remote moisture-content balance
ARC-11032 876-10492 03
- MAYNARD, V**
Cleaning carbon steel
KSC-10689 876-10275 08
- MCCLUNEY, W R**
Economical measurement of particle concentration
GSFC-12088 876-10332 03
- MCCLUNG, T M**
Caution and warning system
MSC-16046 876-10531 05
- MCDONALD, G**
Solar selective surfaces
LEWIS-12614 876-10047 03
- MCKEE, H B**
Vacuum-jacketed line spacer
MSC-14365 876-10083 06
- MCLAIN, A G**
Rapid kinetics
LANGLEY-12140 876-10529 04
- MCLALLIN, K L**
Improved automobile gas turbine engine
LEWIS-12521 876-10115 07
- MCLARTY, D M**
Simplified explosive-weld evaluation
MSC-14654 876-10228 06
- MCLAUGHLIN, P B**
Firefighter's breathing system
MSC-14733 876-10208 05
- MCLYMAN, W T**
Toroidal converter core
NPO-13413 876-10293 01
Composite stacked moly-permalloy cores
NPO-13578 876-10294 01
Feedback arrangement for regenerative switches
NPO-13060 876-10302 01
Majority-voted logic fail-sense circuit
NPO-13107 876-10313 01
Simplified cut-core inductor
NPO-13600 876-10317 01
Transformer design tradeoffs
NPO-13755 876-10470 01
- MEHMED, O**
Pressure tube instrumentation
LEWIS-12539 876-10101 06
- MENDENHALL, G D**
Chemiluminescent prediction of service life
MSC-16010 876-10191 04
- MEREDITH, B D**
Solid-state turn-coordinator display
LANGLEY-12090 876-10451 01
- MERWIN, R B**
Serial-to-parallel color-TV converter
MSC-14844 876-10027 02
- MESCH, H G**
Solar cell electrical connections
LEWIS-12293 876-10260 08
- MESCHKOW, S Z**
Safety organizations and experts
LEWIS-12742 876-10598 09
- MEYERING, H R**
Receiver performance evaluator
NPO-13701 876-10324 02

M

MEZRICH, R S

Voltage control for corona charging thermoplastics
M-FS-23102 876-10043 03
Hologram-reconstruction signal enhancement
M-FS-23104 876-10343 03

MEZZACAPPA, M A

Estimation of spares
MSC-19469 876-10133 09

MIKULLA, V

Hot-wire probe
ARC-10900 876-10222 06

MILBERGER, W E

Fluorescent-lamp power supply
MSC-14900 876-10140 01

MILLER, A J

Binary/BCD-to-ASCII data converter
GSFC-12044 876-10322 02

MILLER, C G

Atmospheric particle sampler
NPO-13396 876-10059 04
Continuous HCl in air indicator
NPO-13474 876-10060 04
Energy conversion system
NPO-13510 876-10485 03
Electrostatic-discharge ignition
NPO-13798 876-10487 03

MILLER, E R

Low-light-level integrating video system
M-FS-23288 876-10347 03

MILLMAN, L L

AC adapter for fuel-flow sensor
GSFC-12037 876-10387 06

MITCHELL, C L

Mask analysis program
M-FS-23431 876-10318 01

MITCHELL, M J

Combined joining process for dissimilar metals A concept
MSC-19323 876-10127 08
Diffusion brazing nickel-plated stainless steel
MSC-19322 876-10265 08

MOGAVERO, L

Document restoration by computer techniques
HQN-10910 876-10597 09

MOGAVERO, L N

Tracking system for moving subjects
HQN-10880 876-10028 02

MOOKHERJI, T K

Passive thermal-control coatings
M-FS-22794 876-10071 04

MOORE, R C

Open-loop digital frequency multiplier
MSC-12709 876-10447 01

MOORE, S F

Overload-protector/fault-indicator circuit
NPO-13592 876-10308 01

MORECROFT, J H

Interactive imaging and data processing
NPO-13655 876-10167 02

MORGAN, J E

Rocking-motion sensor for the blind
MSC-14805 876-10366 05

MORGAN, L E

Serial-data correlator/code translator
KSC-11025 876-10454 01

MORRIS, D J

Shock interference patterns and heating
LANGLEY-11497 876-10240 06

MORRIS, W D

Contouring randomly spaced data
LANGLEY-12044 876-10436 09

MORRISON, L K

Airport laser-Doppler
M-FS-23423 876-10174 03

MORRISON, T J

Annealing strained alloy 718
M-FS-19242 876-10284 08

MOSES, R A

Venting for condensation in gas lines
MSC-19621 876-10109 06

MOSSOLANI, D L

Leveling apparatus for precision instruments
ARC-10981 876-10572 07

MUELLER, C

Improved road handler
M-FS-23233 876-10413 07

MUELLER, R

Pressure tube instrumentation
LEWIS-12539 876-10101 06

MUELLER, R A

All-weather ice information system
LEWIS-12638 876-10018 02

MUELLER, W A

Less-costly activated carbon for sewage treatment
NPO-13877 876-10516 04

MULLINS, O

Electrolyte cells measure oxygen fugacities
MSC-16089 876-10523 04

MYERS, I T

DC-to-DC conversion with voltage multipliers
LEWIS-12297 876-10138 01

N**NAGLE, W J**

Battery single-cell protection system
LEWIS-12039 876-10306 01

NATHAN, R

Interactive imaging and data processing
NPO-13655 876-10167 02
High-resolution electron microscope
NPO-13811 876-10499 03

NATHAN, R A

Chemiluminescent prediction of service life
MSC-16010 876-10191 04

NEELY, P L

Digital video image system
M-FS-23322 876-10166 02
Low-light-level integrating video system
M-FS-23288 876-10347 03

NELSON, S E

Tool removes brazed fittings
LANGLEY-10944 876-10244 07

NERHEIM, N M

Efficient copper-vapor pulsed laser
NPO-13449 876-10341 03

NEWHALL, X X

Development ephemeris number 96
NPO-14002 876-10507 03

NIER, A O

Double-focusing mass spectrometer
NPO-13663 876-10183 03

NIES, T

DIP extractor simplifies circuit removal
MSC-12712 876-10002 01

NOLTE, L J

Spin-rate control device
ARC-10884 876-10417 07

NORTON, M

Precision measurement of changes in physical dimensions
M-FS-23527 876-10543 06

NOSSEN, E J

Doppler extraction with a digital VCO
MSC-14814 876-10452 01

NOTO, R

Economical custom LSI arrays
M-FS-23262 876-10004 01

NOVAL, B A

Nucleation of electronic-crystal regions
876-10524 04

NUSSMEIER, T A

Analysis of laser heterodyne communications
GSFC-12098 876-10511 03

O**OBERIN, F W**

Parylene coating for circuit components
M-FS-23450 876-10583 08

OEFFINGER, T R

A passive chevron replicator
LANGLEY-11906 876-10441 01

OEHRMAN, W I

Gust alleviation for STOL aircraft
LANGLEY-11413 876-10099 06

OHLHORST, C W

CONVERT Technique and computer program for calculating photographic film-density variations
LANGLEY-11873 876-10057 03

OKRESS, E C

Containerless processing of tungsten
M-FS-23509 876-10422 08

OLESON, C C

Reduction of computer power interruptions
MSC-16136 876-10479 02

OLSEN, O K

Reducing cold flow in elastomeric O-rings
M-FS-24336 876-10086 06

ORZECOWSKI, J A

COMOC a finite-element algorithm for the Navier-Stokes equations
LANGLEY-11480 876-10241 06

OSMUNDSON, J

Stabilized Nd YAG laser output
GSFC-11571 876-10335 03

OZARSKI, R

Standard aerosols for particle velocimeters
M-FS-23075 876-10050 03

P**PACKER, P N**

Vacuum holddown fixture
MSC-19666 876-10589 08

PAGE, R J

Improved high-temperature heater with stabilized-zirconia elements
M-FS-23351 876-10221 06

PALMER, W L

Printed-circuit solar-cell array
M-FS-23128 876-10007 01

PALUKA, J R

Overload-protector/fault-indicator circuit
NPO-13592 876-10308 01

- PARK, A C**
Impact response analyses
M-FS-23335 876-10559 06
- PARKER, A J**
Thermal insulation for high-temperature systems
GSFC-10954 876-10064 04
- PARKER, D L**
Faster X-ray analysis of semiconductor wafers
M-FS-23315 876-10225 06
- PARKER, J A**
Inexpensive portable drug detector
ARC-10633 876-10534 05
- PARKER, J T**
Caution and warning system
MSC-16046 876-10531 05
- PARKER, T W**
Duplexer switch
LANGLEY-11546 876-10448 01
- PASLAY, D**
Oral annunciator with programmable vocabulary
MSC-14798 876-10326 02
- PATELLA, F J**
Microprogramming for real-time data acquisition
KSC-11027 876-10328 02
- PATON, N E**
Detection of surface impurities on processed metals
MSC-19670 876-10553 06
- PATTEN, T C**
Vacuum-jacketed line spacer
MSC-14365 876-10083 06
- PAULLAY, A J**
Analytic numerical solutions for shock waves
ARC-10959 876-10096 06
- PAWLOWSKI, J F**
Tracking a phase-shift-keyed signal
MSC-16170 876-10481 02
- PECKINPAUGH, C J**
Guidelines for multiple LSI packaging
M-FS-23367 876-10159 01
- PELETIER, D P**
Pulse amplitude discriminator threshold calibration
GSFC-11912 876-10023 02
- PELHANK, D A**
RF shaping of silicon ribbon
M-FS-23424 876-10258 08
- PELLERIN, C J**
Analog-to-binary conversion of video data
GSFC-11918 876-10165 02
- PEOPLES, J A**
Proposed low-temperature solar engine
M-FS-23403 876-10254 07
- PERALA, R A**
Low-power programmable high-voltage supply
LANGLEY-11316 876-10458 01
- PERKINS, K L**
Organic adhesives for hybrid microcircuits
M-FS-23370 876-10014 01
- PERLMAN, M**
M-ary shift register
NPO-11868 876-10011 01
- PERRY, W E**
Color to black-and-white converter
MSC-12618 876-10346 03
- PETERS, P N**
Improved microbridge Josephson devices
M-FS-23274 876-10012 01
- Ellipsometer for measurement in ultrahigh vacuum
M-FS-23130 876-10035 03
- PETERSON, P D**
Caution and warning system
MSC-16046 876-10531 05
- PETTUS, R O**
Contamination monitoring of fluids
KSC-11037 876-10382 06
- PHELPS, G A**
Electrical-cable design guide
M-FS-24280 876-10157 01
- PICCILOLO, G L**
Quantitative bioluminescent detection of bacteria
GSFC-12003 876-10073 05
Fast measurement of bacterial susceptibility to antibiotics
GSFC-10246 876-10536 05
- PIETRZYK, J P**
Vidicon intensifier
NPO-11912 876-10054 03
- PILLAI, P K C**
Fabrication and applications of electrets
M-FS-23437 876-10429 08
- PINTO, J J**
Safety organizations and experts
LEWIS-12742 876-10598 09
- PITTMAN, C M**
Multilayer insulative systems
LANGLEY-12057 876-10528 04
- PIVIROTTI, T J**
Efficient copper-vapor pulsed laser
NPO-13449 876-10341 03
- PIZZECK, D E**
Multiple-layer printed-wiring trace connector
LANGLEY-11709 876-10305 01
- PLUMER, J A**
WING Calculating lightning-induced voltages in electrical circuits within an aircraft wing
LEWIS-12108 876-10351 03
- POFERL, D**
Noncontaminating method for visualizing gas flow
LEWIS-12076 876-10088 06
- POLENTZ, P P**
Stability of an elastic airplane
ARC-11086 876-10568 06
- POLHEMUS, J T**
Rocking-motion sensor for the blind
MSC-14805 876-10366 05
- PORTER, W A**
Faster X-ray analysis of semiconductor wafers
M-FS-23315 876-10225 06
- POSEY, D L**
Radial level
LANGLEY-11982 876-10246 07
- PRATT, J R**
Novel aminobenzyl and imidobenzyl benzenes
LANGLEY-11843 876-10058 04
- PRIMEAUX, G R**
Meal system for the elderly
MSC-16062 876-10530 05
- PRITCHARD, R P**
Door latch with through-access hole
MSC-19634 876-10414 07
- PRYOR, R L**
CMOS-compatible tristate cable driver
M-FS-23410 876-10149 01
- PUCCINELLI, E**
Digital image-rectification system
GSFC-12156 876-10513 03
- PUTNAM, L E**
Swept-tapered-wing aerodynamics
LANGLEY-11701 876-10112 06
- PUTNAM, T W**
Relative humidity from psychrometric data
FRC-10108 876-10285 09
- PUTNEY, B**
GEODYN Orbital and geodetic parameter estimation
GSFC-12014 876-10396 06

Q

- QUINN, R B**
Waveguide-to-coax transition/low-pass filter
NPO-13642 876-10147 01

R

- RAGGIO, L J**
Interlocking butterfly tourniquet
MSC-19382 876-10532 05
- RAMONDETTA, P**
Economical custom LSI arrays
M-FS-23262 876-10004 01
- RAMSEY, C R**
Data system for multiplexed water-current meters
M-FS-23343 876-10493 03
- RANSOM, F E**
Method of removing drilling chips
M-FS-19235 876-10262 08
- RAO, C S R**
Rapid kinetics
LANGLEY-12140 876-10529 04
- RASOR, N S**
Hybrid-mode thermionic converter
HQN-10876 876-10056 03
- RAUCH, H W, SR**
Coatings for mullite insulation
LANGLEY-11150 876-10067 04
- RAUSCHENBACH, H S**
Solar cell electrical connections
LEWIS-12293 876-10260 08
- REIBLE, S A**
Superconductive neuristor R-junction
HQN-10871 876-10003 01
- REMBAUM, A**
Catalysts for low-energy aldehyde processes
NPO-13827 876-10519 04
- RHODES, C A**
Contamination monitoring of fluids
KSC-11037 876-10382 06
- RICCITIELLO, S R**
Polymeric foams stable at high temperatures
ARC-11008 876-10065 04
- RICE, E J**
Attenuation of sound in ducts with acoustic treatment
LEWIS-12686 876-10226 06
- RICE, R F**
Advanced imaging communication system
NPO-13545 876-10482 02
- RICE, S H**
Elimination of color rings on film negatives
GSFC-12110 876-10498 03

RICE, W J

Indicated mean-effective pressure
instrument
LEWIS-12661 B76-10542 06

RICHMOND, R G

Molecular beam generator
MSC-14996 B76-10353 04
Instrumentation for measuring low-level
currents/voltages
MSC-14855 B76-10480 02

RIGLING, W S

High-temperature flat-conductor cable
M-FS-23451 B76-10144 01

RIPPY, R R

A linear phase demodulator
GSFC-12018 B76-10291 01

RITZ, R G

Meal system for the elderly
MSC-16062 B76-10530 05

ROBBINS, R L

Multiposition rescue litter
MSC-16148 B76-10368 05

ROBINSON, A R

Computer-automated ultrasonic
inspection system
M-FS-23338 B76-10217 06

ROCHAT, R D

RF shaping of silicon ribbon
M-FS-23424 B76-10258 08

ROELKE, R J

Improved automobile gas turbine
engine
LEWIS-12521 B76-10115 07

ROGERS, J R

Wingtip smoke generator
ARC-10905 B76-10373 06

ROMBERG, J M

Prevention of design flaws in
multicomputer systems
MSC-14920 B76-10330 02

ROSENTHAL, F L

Graphic-to-digital conversion system
M-FS-24410 B76-10019 02

ROSITANO, S

Measuring mandibular motions
ARC-10956 B76-10362 05

ROSTAFINSKI, W A

Impedance of curved ducts
LEWIS-12636 B76-10237 06

ROUSH, R M, JR

Transducer bonding kit
MSC-19690 B76-10587 08

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Safety organizations and experts
LEWIS-12742 B76-10598 09

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Efficient copper-vapor pulsed laser
NPO-13449 B76-10341 03

RUTECKI, D J

Containerless processing of tungsten
M-FS-23509 B76-10422 08

RUTZ, E M

Combined GaAs laser outputs
M-FS-23397 B76-10173 03
Pulse transformer for GaAs laser
M-FS-23399 B76-10185 03
Spatially-coherent coupled
semiconductor lasers
M-FS-23396 B76-10500 03

S**SALMASSY, O K**

3-D foam adhesive deposition
M-FS-22739 B76-10271 08

SALOMON, P M

Data-storage compression scheme
NPO-13488 B76-10017 02
Deflection amplifier for image

dissectors

NPO-13079 B76-10449 01

SALTZ, K T

Overhead tray for cable test system
MSC-19488 B76-10270 08

SANDBORN, V A

Outer flow and turbulence in boundary
layers
M-FS-23286 B76-10100 06

SANDERS, J A

Battery-cell thermal test facility
M-FS-23040 B76-10124 08

SANDFORD, M C

Miniature-angular-position transducer
LANGLEY-11999 B76-10555 06

SANDIFER, R J

SANDTRACKS World map and stations
predictions computer programs
GSFC-12099 B76-10190 03

SAUNDERS, F W

Capacitively-coupled data receiver clipper
stage
MSC-14989 B76-10456 01

SCHANBACHER, J R

Stopping small liquid leaks
KSC-10667 B76-10126 08

SCHARMACK, D K

Time-domain aircraft model
MSC-16018 B76-10391 06

SCHERTLER, R J

All-weather ice information system
LEWIS-12638 B76-10018 02

SCHINDLER, R A

Stepping optical path difference in an
interferometer
NPO-13569 B76-10033 03
Improved interferometer beam splitter
NPO-11932 B76-10041 03
Servo corrects interferometer-mirror tilt
NPO-13687 B76-10502 03

SCHMIDT, L F

Data-storage compression scheme
NPO-13488 B76-10017 02
Anamorphic lens for tracking system
NPO-13062 B76-10046 03

SCHMIDT, W W

Ultra-lightweight pressure vessels
MSC-14983 B76-10266 08

SCHMITT, R J

Laser particulate spectrometer
MSC-14969 B76-10331 03

SCHOPPET, G C

Recording-tape position sensor
GSFC-12056 B76-10577 07

SCHROCK, C G

Fast measurement of bacterial
susceptibility to antibiotics
GSFC-10246 B76-10536 05

SCHULZ, J R

Extraction of urea and ammonium ion
ARC-11064 B76-10515 04

SCHULZE, A E

Physician's modern 'Black Bag'
MSC-14936 B76-10212 05

SCHUMANN, L F

Improved automobile gas turbine
engine
LEWIS-12521 B76-10115 07

SCHUTT, J B

Remote sensing of vegetation and soil
GSFC-11976 B76-10490 03

SCHWARTZ, E W

Measurement of rapidly-changing
heating rates
LANGLEY-11380 B76-10097 06

SCHWARTZ, S

Solventless intumescent coatings
ARC-10996 B76-10194 04

SEGNA, D R

Faceted solar energy collectors
MSC-12687 B76-10182 03

SEIDEL, R C

Control system design
LEWIS-12556 B76-10404 06
Processing equations for state-space
models
LEWIS-12555 B76-10438 09
Transfer-function parameters
LEWIS-12612 B76-10605 09

SELCUK, M K

Improved solar-energy collector
NPO-13813 B76-10486 03

SELLERS, J F

DYNGEN
LEWIS-12506 B76-10108 06

SEPPER, W

Serial-to-parallel color-TV converter
MSC-14844 B76-10027 02

SERAFINI, T T

Second-generation PMR polyimides
LEWIS-12738 B76-10359 04

SHACKLEFORD, J B

Microprogrammed telemetry processor
ARC-11061 B76-10460 01

SHAFFER, R

Solvent for 1-phenyl-3-pyrazolidone in
photography
GSFC-11992 B76-10496 03

SHANSEN, S

Stability of an elastic airplane
ARC-11086 B76-10568 06

SHARPSTEEN, J T

DC drive system for cine/pulse
cameras
MSC-16085 B76-10497 03

SHELTON, G B

Band-elimination filter
M-FS-23303 B76-10295 01

SHER, A

Pyroionic infrared detector
LANGLEY-11921 B76-10204 04

SHERFEY, J M

Metal structures with parallel pores
GSFC-10984 B76-10131 08

SHETH, S G

Flame-resistant elastomeric polymers
MSC-16078 B76-10357 04

SHILLINGER, G L, JR

Accelerator for biomedical studies
ARC-10898 B76-10367 05

SHINN, J M, JR

Economical solar-heating for homes
LANGLEY-12135 B76-10571 07

SHRIDER, K R

Airport laser-Doppler
M-FS-23423 B76-10174 03

SHRIVER, E L

Fabrication and applications of electrets
M-FS-23437 B76-10429 08

SHULMAN, A R

Contrast enhancement of transparencies
GSFC-11989 B76-10181 03
Solvent for 1-phenyl-3-pyrazolidone in
photography
GSFC-11992 B76-10496 03

- SHULMAN, E L**
Solvent for 1-phenyl-3-pyrazolidone in
photography
GSFC-11992 B76-10496 03
- SHUMATE, M S**
Differential-optoacoustic absorption
detector
NPO-13759 B76-10494 03
- SIDMAN, K R**
Flame-resistant elastomeric polymers
MSC-16078 B76-10357 04
- SIERADSKI, L M**
Double-focusing mass spectrometer
NPO-13663 B76-10183 03
- SILVER, R H**
Myocardial wall-thickness transducer
NPO-13644 B76-10075 05
- SILVERMAN, C E**
Brazing/Rebrazing process for CRES steel
MSC-19600 B76-10280 08
- SIMMONDS, M R**
Firefighter's breathing system
MSC-14733 B76-10208 05
- SIMMONS, N E**
Pulse detector
MSC-16268 B76-10557 06
- SIMON, M K**
Demodulator aids synchronization
NPO-13605 B76-10164 02
- SIMON, W E**
Velocity sensor for slow flows
LANGLEY-11785 B76-10380 06
- SIMONSON, R B**
Compound solder joints
LANGLEY-11444 B76-10274 08
- SIMPSON, W G**
Mixing ingredients in foam dispenser
M-FS-20607 B76-10592 08
- SMID, M T**
Elimination of thermally generated EMF's
on PC boards
MSC-16125 B76-10594 08
- SMITH, A**
Economical custom LSI arrays
M-FS-23262 B76-10004 01
- SMITH, I D**
Cleaning large tanks and gas bottles
MSC-14966 B76-10430 09
- SMITH, J G**
Demodulator aids synchronization
NPO-13605 B76-10164 02
- SMITH, T**
Detecting contamination on a metal
surface
M-FS-19260 B76-10552 06
- SMOOT, D M**
Field sampling fine-vacuum system
KSC-10596 B76-10118 07
- SOBKIEWICZ, S A**
Improved bonding of honeycomb panels
MSC-19560 B76-10428 08
- SOLHEIM, C D**
DC drive system for cine/pulse
cameras
MSC-16085 B76-10497 03
- SOLLOWAY, C B**
Birth/death process model
NPO-13616 B76-10213 05
- SPENCER, R S**
Elimination of color rings on film
negatives
GSFC-12110 B76-10498 03
- SPERA, D A**
Thermal fatigue-and-oxidation-resistant
alloy
LEWIS-12564 B76-10061 04
- Comparative thermal fatigue resistance
LEWIS-12563 B76-10062 04
- SPRUILL, M**
Soldering high-impedance Nichrome
wire
M-FS-1457 B76-10264 08
- SPUCK, W**
Document restoration by computer
techniques
HQN-10910 B76-10597 09
- SRINIVASA, S R**
Analysis of bonded joints
LANGLEY-11871 B76-10231 06
- ST CLAIR, T L**
Lightweight orthotic appliances
LANGLEY-11918 B76-10076 05
- New diamine hardeners for epoxies
LANGLEY-11823 B76-10522 04
- STAIMACH, C J**
One-wire thermocouple
MSC-16220 B76-10556 06
- STALMACH, C J, JR**
Aluminum transfer method for plating
plastics
MSC-16221 B76-10593 08
- STANDISH, E M, JR**
Development ephemeris number 96
NPO-14002 B76-10507 03
- STANGE, W C**
Cyclical bi-directional rotary actuator
GSFC-11883 B76-10117 07
- STARNER, E R**
Doppler extraction with a digital VCO
MSC-14814 B76-10452 01
- STEIN, J A**
Frozen-fluid line repair
MSC-19132 B76-10227 06
- STEIN, M I**
Multispectral-scanner image processing
GSFC-12135 B76-10508 03
- Digital image-rectification system
GSFC-12156 B76-10513 03
- STEINMETZ, C C**
Electrode structure for uniform corona
discharge
M-FS-22617 B76-10045 03
- STEPHENS, J B**
Atmospheric particle sampler
NPO-13396 B76-10059 04
- Electrostatic-discharge ignition
NPO-13798 B76-10487 03
- STEPHENS, W B**
Analysis of axisymmetric shell structure
LANGLEY-12059 B76-10398 06
- STEPKA, F S**
Noncontaminating method for visualizing
gas flow
LEWIS-12076 B76-10088 06
- STEUDL, R M**
Controlled linear clasper/loader
GSFC-12105 B76-10432 08
- STEVENSON, G E**
Manual trash compactor
MSC-16039 B76-10390 06
- STOAP, L J**
DC drive system for cine/pulse
cameras
MSC-16085 B76-10497 03
- STOCKER, P L**
Laser extensometer
M-FS-19259 B76-10030 03
- STONE, F D**
ROUS bolt-tensioning monitor
LANGLEY-12016 B76-10216 06
- STOUT, D F**
Charge-sensitive amplifier with notched
frequency response
LANGLEY-11317 B76-10440 01
- Low-power programmable high-voltage
supply
LANGLEY-11316 B76-10458 01
- STOWERS, I F**
Contamination monitoring of fluids
KSC-11037 B76-10382 06
- STRINGER, E J**
Plug-in light switches
M-FS-24183 B76-10001 01
- Electrical-splicing connector
M-FS-24254 B76-10300 01
- Plug-in circuit monitor
MSC-19455 B76-10311 01
- Microprogrammable module
MSC-19456 B76-10312 01
- STROM, T N**
Cost saving synergistic shaft seal
LEWIS-12119 B76-10081 06
- STRUZIK, E A**
Thermal/acoustical insulation foam
MSC-14795 B76-10195 04
- STUART, J L**
Automated solvent concentrator
NPO-13068 B76-10198 04
- Fraction-storage unit for
drug-identification system
NPO-13111 B76-10200 04
- STUMP, B L**
Novel aminobenzyl and imidobenzyl
benzenes
LANGLEY-11843 B76-10058 04
- SULLIVAN, J L**
Firefighter's breathing system
MSC-14733 B76-10208 05
- SUPKIS, D E**
Experimental data for new fire-retardant
materials
MSC-16022 B76-10361 04
- SUTHERLAND, I A**
Machining titanium alloys
M-FS-23006 B76-10283 08
- SWERDLING, B**
Thermal-diode heat pipe
ARC-10997 B76-10223 06
- SZUHAI, A B**
Soft seat A-N fitting for vacuum use
LEWIS-10130 B76-10408 07

T

- TAMEKUNI, M**
BUCLAP2
LANGLEY-11696 B76-10111 06
- TAUSWORTHE, R C**
Active retrodirective antenna
NPO-13641 B76-10463 01
- TAYLOR, R C**
Measuring mandibular motions
ARC-10956 B76-10362 05
- TELFER, T A**
Transistor-to-substrate bond quality
M-FS-21931 B76-10137 01
- TELLIER, G F**
Improved cryogenic shaft seals
M-FS-19153 B76-10080 06
- TERAMURA, K**
Graphical methods for variable sampling
plans
MSC-19279 B76-10431 08

TERP, L S

Gas boost compressor
MSC-14757 876-10415 07

TESINSKY, J S

Flexible-pile thermal sealant
MSC-19568 876-10371 06

THALLER, L A

REDOX - electrochemical energy
storage
LEWIS-12220 876-10070 04

THEALL, C E

Voltage-offset reduction in data
transmitters
MSC-14933 876-10321 02

THOMAS, E F

Determination of radiative current in
LED's
GSFC-12034 876-10042 03

THOMAS, E F, JR

Light pipes for LED measurements
GSFC-11887 876-10034 03
Beam patterns of light-emitting diodes
GSFC-11890 876-10040 03

THOMAS, N L

Optical alignment system
ARC-10932 876-10178 03

THOMAS, R D

Battery single-cell protection system
LEWIS-12039 876-10306 01

THOMPSON, J A

Precision centering vise
KSC-11041 876-10409 07

THOMSON, J A L

Standard aerosols for particle
velocimeters
M-FS-23075 876-10050 03

THOMSON, J S L

Wind velocity measurement
M-FS-23362 876-10172 03

TICKNER, E G

Liquid-cooled bra for cancer detection
ARC-11007 876-10533 05

TIMOTHY, J G

Two-dimensional photon detector
M-FS-23325 876-10048 03
Microchannel detector array for X-rays
and UV
M-FS-23324 876-10053 03

TITTMANN, B R

Reduction of acoustic losses by
outgassing
MSC-15985 876-10069 04

TOCCI, L R

A passive chevron replicator
LANGLEY-11906 876-10441 01

TOMA, J

Portable, wind sensitive directional air
sampler
LEWIS-12743 876-10489 03

TOMASZEWSKI, I B

Independent trajectory determination
system
GSFC-11923 876-10569 06

TOSHI, T Y

Effects of mismatch on group delay of
microwave transmission
NPO-13863 876-10478 02

TOTH, J M, JR

General instability analysis
M-FS-23407 876-10563 06

TOWNSEND, D P

Fatigue life of spur and helical gear
sets
LEWIS-12596 876-10224 06

TRIPP, L L

BUCLAP2
LANGLEY-11696 876-10111 06

TROENDLE, J A

Zero-angle helical coil
GSFC-10969 876-10085 06

TRUST, R D

Transient thermal analysis of fluid
systems
MSC-19502 876-10401 06

TURNAGE, J E

Ultraviolet fire detector
M-FS-21577 876-10016 02

TUTHILL, G A

Mechanical positioner
MSC-15817 876-10245 07

TYSON, B J

Separation of water from air samples
ARC-10890 876-10205 04

U

UKANWA, A O

Handbook of liquid metals
M-FS-23355 876-10072 04

ULRICH, D R

Nucleation of electronic-crystal regions
M-FS-23049 876-10524 04

UPDIKE, O L

Measuring trace dispersants in gas
streams
ARC-10896 876-10374 06

V

VALLOTON, W C

An artificial leg for hip disarticulation
ARC-10916 876-10541 05

VAN AUSSDAL, R K

Powered wheel for aircraft
LANGLEY-12053 876-10411 07

VAN FOSSEN, G J, JR

Heat-transfer coefficients of pin-finned
cylinders
LEWIS-12557 876-10554 06

VAN WIE, P H

Digital image-rectification system
GSFC-12156 876-10513 03

VANASSE, M A

Improved soldering iron tip
M-FS-19349 876-10145 01

VANIMAN, J L

Self-contained constant-temperature
heat absorber
M-FS-22989 876-10091 06

VANMELLE, M J

Temperature reference for microwave
radiometer calibration
LANGLEY-11355 876-10503 03

VANNUCCI, R D

Second-generation PMR polyimides
LEWIS-12738 876-10359 04

VARY, A

Ultrasonic measurement of fracture
toughness
LEWIS-12642 876-10372 06

VAUGHAN, E T

Input/output error analyzer
GSFC-12132 876-10610 09

VERBER, C M

Photorefractive page composer
M-FS-23419 876-10171 03

VILLARREAL, S

Tracking a phase-shift-keyed signal
MSC-16170 876-10481 02

VINE, J

Magnifying image intensifier
GSFC-12010 876-10506 03

VISWANATHAN, A V

BUCLAP2
LANGLEY-11696 876-10111 06

VON TIESENHAUSEN, G F

Solar concentrator/absorber
M-FS-23428 876-10253 07

VORHABEN, K H

Unichromatic-carrier color-TV system
MSC-14683 876-10026 02

W

WAGNER, P A

Atmosphere-generating system
MSC-14713 876-10389 06

WAKEFIELD, M E

Yield-pressure determination
MSC-14655 876-10581 08

WAKELAND, W

Birth/death process model
NPO-13616 876-10213 05

WALKER, T C

Computer-automated ultrasonic
inspection system
M-FS-23338 876-10217 06

WALKER, W L

Low-cost solar reflectors
NPO-13707 876-10123 08

WALSH, J M

Specific-ion electrodes for measuring Ag
ions
MSC-14906 876-10068 04

WALTER, H U

Ellipsometer for measurement in
ultrahigh vacuum
M-FS-23130 876-10035 03

WAMSTEKER, W

Low-light-level integrating video system
M-FS-23288 876-10347 03

WANG, T G

Acoustic-energy shaping of meltable
metals
NPO-13802 876-10423 08

WARD, C M

Improved wet-slug capacitor
LANGLEY-11720 876-10008 01

WARNER, D M

Impact response analyses
M-FS-23335 876-10559 06

WARREN, W B

Signal enhancement filters
MSC-14907 876-10453 01

WARSHAY, M

REDOX - electrochemical energy
storage
LEWIS-12220 876-10070 04

WASSERBAUER, C A

Predicting off-design performance of
radial-inflow turbines
LEWIS-12500 876-10242 06

WATERS, W J

Thermal fatigue-and-oxidation-resistant
alloy
LEWIS-12564 876-10061 04

WATSON, G H

Thermal-radiation model
M-FS-23538 876-10562 06

WEAGANT, R

Optical bias assembly
MSC-14412 876-10051 03

- WEBB, W E**
Bit-error rates in optical communications
M-FS-23340 B76-10286 09
- WEBBON, B W**
Sublimator/evaporator heat sink
ARC-10912 B76-10384 06
- WEITZENKAMP, L A**
Ellipsometer for measurement in ultrahigh vacuum
M-FS-23130 B76-10035 03
- WELLS, T G**
Computer-automated ultrasonic inspection system
M-FS-23338 B76-10217 06
- WENNAGEL, G J**
External heater for cryogenic vessels
MSC-14056 B76-10337 03
- WESSELSKI, C J**
Low-onset-rate energy absorber
MSC-12279 B76-10385 06
- WHEELER, J T**
Power supply with optical-isolator control
HQN-10827 B76-10466 01
- WHETSTONE, W D**
SPAR Structural-performance analysis and redesign
LANGLEY-12062 B76-10399 06
- WHIFFEN, E L**
Electron-beam welder alignment
MSC-19642 B76-10269 08
- WILCK, H C**
Subcarrier signal combiner for arrayed antennas
NPO-13723 B76-10329 02
- WILKINS, J R**
Signal processing and display for electrochemical data
LANGLEY-11922 B76-10327 02
- WILKOWSKI, J C**
Energy-absorbing attenuator
MSC-17473 B76-10419 07
- WILLIAMS, B A**
Liquid-cooled bra for cancer detection
ARC-11007 B76-10533 05
- WILLIAMS, B B**
Stripper for silicone polymers
MSC-19380 B76-10267 08
- WILLIAMS, R J**
Electrolyte cells measure oxygen fugacities
MSC-16089 B76-10523 04
- WILSON, D J**
Airport laser-Doppler
M-FS-23423 B76-10174 03
- WILSON, D S**
Pump failure monitor
M-FS-23366 B76-10219 06
- WILSON, I J**
Forming hard aluminum in complex shapes
MSC-19693 B76-10579 08
- WILSON, J W**
Proton tissue dose
LANGLEY-11802 B76-10078 05
- WILSON, R L**
Capacitive shaft-angle encoder
ARC-10897 B76-10386 06
- WING, L D.**
Tangent-ogive nose cones
GSFC-11468 B76-10107 06
- WINGROVE, R C**
Estimating aircraft states
ARC-10969 B76-10567 06
- WINKELSTEIN, R A**
Subcarrier signal combiner for arrayed antennas
NPO-13723 B76-10329 02
- WINSLOW, D J**
Remote, unattended, forest fire detector
M-FS-21221 B76-10077 05
- WISER, C**
Impact of a solid body with water
M-FS-23512 B76-10560 06
- WITTMAN, J E**
Molecular beam generator
MSC-14996 B76-10353 04
- WONG, P**
Oral annunciator with programmable vocabulary
MSC-14798 B76-10326 02
- WONG, R Y**
Improved automobile gas turbine engine
LEWIS-12521 B76-10115 07
- WOOD, K D**
Time-domain reflectometry for cable-fault isolation
KSC-10741 B76-10377 06
- WOODALL, J M**
Epitaxial growth of Ga_{1-x}Al_xAs on GaP
GSFC-11826 B76-10261 08
- WOODBURY, J R**
Infrared range sensor
ARC-10885 B76-10475 02
- WOODBURY, R C**
Peak-acceleration limiter
NPO-11940 B76-10082 06
- Fail-safe hydraulic shaker protection
NPO-13726 B76-10218 06
- WOODFILL, R E**
Door latch with through-access hole
MSC-19634 B76-10414 07
- WOODGATE, B E**
Pinhole diffraction filter
GSFC-12120 B76-10333 03
- Shadow mask for X-ray spectrometer
GSFC-12131 B76-10348 03
- WOODWARD, F A**
Swept wing aerodynamics
ARC-10790 B76-10403 06
- WORKMAN, G L**
Hydrogen chloride test set
M-FS-23357 B76-10063 04
- WORMLEY, D N**
Air-cushion landing systems
LANGLEY-11783 B76-10397 06
- WOUGH, G**
Containerless processing of tungsten
M-FS-23509 B76-10422 08
- WRIGHT, H W**
Technique for joining metal tubing
ARC-10946 B76-10279 08
- WRIGHT, J P**
Cryogenic storage tank thermal analysis
MSC-19103 B76-10234 06
- WRIGHT, L O**
REDOX electrochemical energy storage
LEWIS-12220 B76-10070 04
- WUERKER, R F**
Spatial filter for Q-switched laser
LEWIS-12164 B76-10501 03
- Dual-purpose holocamera
LEWIS-12166 B76-10505 03
- WYDEVEN, T J.**
Abrasion-resistant coatings for plastic surfaces
ARC-10915 B76-10201 04
- Membrane has high urea-rejection properties
ARC-10980 B76-10518 04
- Antireflection coating for plastic lenses
ARC-10983 B76-10591 08

Y

- YASUI, R K.**
JPL solar power experiments
NPO-13461 B76-10098 06
- YEE, B G W**
Computer-automated ultrasonic inspection system
M-FS-23338 B76-10217 06
- YOST, C**
Viscoelastic foam cushion
ARC-11089 B76-10525 04
- YOUNG, D R**
In vivo bone-strain telemetry
ARC-11074 B76-10535 05
- YOUNG, R N**
Signal processing and display for electrochemical data
LANGLEY-11922 B76-10327 02
- YU, I**
Low-cost dual-frequency microwave antenna
MSC-16100 B76-10462 01

Z

- ZANIEWSKI, J J**
Low-reflectivity spectrally selective coating
GSFC-12114 B76-10184 03
- ZARETSKY, E V**
Fatigue life of spur and helical gear sets
LEWIS-12596 B76-10224 06
- ZEBUS, P P**
Vacuum holddown fixture
MSC-19666 B76-10589 08
- ZELIK, J A**
Nondestructive inspection of multilayered insulation
M-FS-22191 B76-10128 08
- ZELLNER, F E**
Slotted bolts and studs for vacuum systems
LEWIS-10391 B76-10407 07
- ZIMMER, J T**
Modular design of high frequency circuits
M-FS-23408 B76-10139 01
- ZIVLEY, G A**
Physician's modern 'Black Bag'
MSC-14936 B76-10212 05
- ZOHAR, S**
Counting digital filter
NPO-11821 B76-10296 01
- Circulating-lines digital filter
NPO-11831 B76-10297 01
- Partitioned counting digital filter
NPO-11832 B76-10298 01
- Hybrid digital-analog implementation of digital filters
NPO-11833 B76-10299 01
- RAM digital filter
NPO-13659 B76-10316 01
- Analog-to-digital conversion for radix (-2)
NPO-13093 B76-10465 01

ZUCKSWERT, S E

Serial-to-parallel color-TV converter

MSC-14844 876-10027 02

ZUK, J

Fundamentals of fluid sealing

LEWIS-12683 B76-10392 06

ZWIENER, J M

Measurement of transient reflectance

M-FS-23160 B76-10037 03

ORIGINATING CENTER/TECH BRIEF NUMBER INDEX

Index to NASA Tech Briefs

Issue 17

Originating Center/Tech Brief Number Index

The left hand column identifies the originating Center number, to the right of each originating Center number is the Tech Brief number, e g B76-10534 followed by a two-digit number e g 05, which identifies the subject category containing the entire citation

		FRC-10108	B76-10285 09	HQN-10890	B76-10232 06
		FRC-10109	B76-10402 06	HQN-10891	B76-10188 03
		FRC-10110	B76-10483 02	HQN-10892	B76-10257 07
				HQN-10893	B76-10187 03
		GSFC-10246	B76-10536 05	HQN-10894	B76-10156 01
		GSFC-10954	B76-10064 04	HQN-10898	B76-10189 03
		GSFC-10969	B76-10085 06	HQN-10899	B76-10238 06
		GSFC-10984	B76-10131 08	HQN-10900	B76-10186 03
		GSFC-11468	B76-10107 06	HQN-10901	B76-10233 06
		GSFC-11571	B76-10335 03	HQN-10910	B76-10597 09
		GSFC-11696	B76-10143 01		
		GSFC-11785	B76-10142 01		
		GSFC-11789	B76-10467 01	KSC-10538	B76-10102 06
		GSFC-11826	B76-10261 08	KSC-10596	B76-10118 07
		GSFC-11880	B76-10476 02	KSC-10651	B76-10304 01
		GSFC-11883	B76-10117 07	KSC-10667	B76-10126 08
		GSFC-11887	B76-10034 03	KSC-10689	B76-10275 08
		GSFC-11890	B76-10040 03	KSC-10740	B76-10388 06
		GSFC-11912	B76-10023 02	KSC-10741	B76-10377 06
		GSFC-11918	B76-10165 02	KSC-11011	B76-10539 05
		GSFC-11923	B76-10569 06	KSC-11022	B76-10521 04
		GSFC-11935	B76-10504 03	KSC-11025	B76-10454 01
		GSFC-11941	B76-10125 08	KSC-11026	B76-10406 07
		GSFC-11943	B76-10022 02	KSC-11027	B76-10328 02
		GSFC-11960	B76-10412 07	KSC-11037	B76-10382 06
		GSFC-11974	B76-10117 07	KSC-11040	B76-10435 09
		GSFC-11975	B76-10117 07	KSC-11041	B76-10409 07
		GSFC-11976	B76-10490 03	KSC-11043	B76-10433 08
		GSFC-11989	B76-10181 03		
		GSFC-11992	B76-10496 03		
		GSFC-12003	B76-10073 05	LANGLEY-10944	B76-10244 07
		GSFC-12010	B76-10506 03	LANGLEY-11047	B76-10565 06
		GSFC-12014	B76-10396 06	LANGLEY-11082	B76-10094 06
		GSFC-12017	B76-10323 02	LANGLEY-11150	B76-10067 04
		GSFC-12018	B76-10291 01	LANGLEY-11180	B76-10273 08
		GSFC-12034	B76-10042 03	LANGLEY-11316	B76-10458 01
		GSFC-12037	B76-10387 06	LANGLEY-11317	B76-10440 01
		GSFC-12044	B76-10322 02	LANGLEY-11319	B76-10009 01
		GSFC-12047	B76-10290 01	LANGLEY-11355	B76-10503 03
		GSFC-12056	B76-10577 07	LANGLEY-11380	B76-10097 06
		GSFC-12077	B76-10278 08	LANGLEY-11391	B76-10434 09
		GSFC-12083	B76-10177 03	LANGLEY-11392	B76-10179 03
		GSFC-12088	B76-10332 03	LANGLEY-11413	B76-10099 06
		GSFC-12098	B76-10511 03	LANGLEY-11444	B76-10274 08
		GSFC-12099	B76-10190 03	LANGLEY-11477	B76-10176 03
		GSFC-12105	B76-10432 08	LANGLEY-11480	B76-10241 06
		GSFC-12110	B76-10498 03	LANGLEY-11497	B76-10240 06
		GSFC-12113	B76-10455 01	LANGLEY-11546	B76-10448 01
		GSFC-12114	B76-10184 03	LANGLEY-11625	B76-10036 03
		GSFC-12120	B76-10333 03	LANGLEY-11659	B76-10550 06
		GSFC-12131	B76-10348 03	LANGLEY-11691	B76-10461 01
		GSFC-12132	B76-10610 09	LANGLEY-11696	B76-10111 06
		GSFC-12135	B76-10508 03	LANGLEY-11701	B76-10112 06
		GSFC-12153	B76-10349 03	LANGLEY-11709	B76-10305 01
		GSFC-12156	B76-10513 03	LANGLEY-11720	B76-10008 01
		GSFC-12186	B76-10596 08	LANGLEY-11739	B76-10586 08
				LANGLEY-11755	B76-10006 01
				LANGLEY-11783	B76-10397 06
		HQN-10748	B76-10089 06	LANGLEY-11785	B76-10380 06
		HQN-10799	B76-10005 01	LANGLEY-11802	B76-10078 05
		HQN-10827	B76-10466 01	LANGLEY-11823	B76-10522 04
		HQN-10834	B76-10289 09	LANGLEY-11843	B76-10058 04
		HQN-10871	B76-10003 01	LANGLEY-11862	B76-10443 01
		HQN-10876	B76-10056 03	LANGLEY-11869	B76-10338 03
		HQN-10880	B76-10028 02	LANGLEY-11871	B76-10231 06
				LANGLEY-11873	B76-10057 03
ARC-10633	B76-10534 05				
ARC-10639	B76-10381 06				
ARC-10790	B76-10403 06				
ARC-10808	B76-10168 02				
ARC-10811	B76-10339 03				
ARC-10812	B76-10375 06				
ARC-10884	B76-10417 07				
ARC-10885	B76-10475 02				
ARC-10890	B76-10205 04				
ARC-10896	B76-10374 06				
ARC-10897	B76-10386 06				
ARC-10898	B76-10367 05				
ARC-10900	B76-10222 06				
ARC-10903	B76-10477 02				
ARC-10905	B76-10373 06				
ARC-10911	B76-10379 06				
ARC-10912	B76-10384 06				
ARC-10915	B76-10201 04				
ARC-10916	B76-10541 05				
ARC-10932	B76-10178 03				
ARC-10941	B76-10573 07				
ARC-10946	B76-10279 08				
ARC-10947	B76-10345 03				
ARC-10956	B76-10362 05				
ARC-10959	B76-10096 06				
ARC-10969	B76-10567 06				
ARC-10976	B76-10590 08				
ARC-10980	B76-10518 04				
ARC-10981	B76-10572 07				
ARC-10983	B76-10591 08				
ARC-10991	B76-10538 05				
ARC-10993	B76-10160 02				
ARC-10994	B76-10537 05				
ARC-10996	B76-10194 04				
ARC-10997	B76-10223 06				
ARC-11007	B76-10533 05				
ARC-11008	B76-10065 04				
ARC-11032	B76-10492 03				
ARC-11061	B76-10460 01				
ARC-11064	B76-10515 04				
ARC-11074	B76-10535 05				
ARC-11086	B76-10568 06				
ARC-11089	B76-10525 04				
ARC-11093	B76-10526 04				

ORIGINATING CENTER/TECH BRIEF NUMBER INDEX

LANGLEY-11877	B76-10601 09	LEWIS-12633	B76-10520 04	M-FS-23274	B76-10012 01
LANGLEY-11888	B76-10239 06	LEWIS-12636	B76-10237 06	M-FS-23286	B76-10100 06
LANGLEY-11906	B76-10441 01	LEWIS-12638	B76-10018 02	M-FS-23287	B76-10015 01
LANGLEY-11918	B76-10076 05	LEWIS-12642	B76-10372 06	M-FS-23288	B76-10347 03
LANGLEY-11921	B76-10204 04	LEWIS-12643	B76-10350 03	M-FS-23303	B76-10295 01
LANGLEY-11922	B76-10327 02	LEWIS-12661	B76-10542 06	M-FS-23308	B76-10013 01
LANGLEY-11940	B76-10582 08	LEWIS-12676	B76-10584 08	M-FS-23312	B76-10259 08
LANGLEY-11941	B76-10120 07	LEWIS-12683	B76-10392 06	M-FS-23315	B76-10225 06
LANGLEY-11973	B76-10365 05	LEWIS-12684	B76-10561 06	M-FS-23320	B76-10243 06
LANGLEY-11975	B76-10074 05	LEWIS-12686	B76-10226 06	M-FS-23322	B76-10166 02
LANGLEY-11982	B76-10246 07	LEWIS-12687	B76-10484 02	M-FS-23324	B76-10053 03
LANGLEY-11988	B76-10551 06	LEWIS-12695	B76-10544 06	M-FS-23325	B76-10048 03
LANGLEY-11997	B76-10442 01	LEWIS-12710	B76-10558 06	M-FS-23335	B76-10559 06
LANGLEY-11999	B76-10555 06	LEWIS-12738	B76-10359 04	M-FS-23338	B76-10217 06
LANGLEY-12003	B76-10087 06	LEWIS-12742	B76-10598 09	M-FS-23340	B76-10286 09
LANGLEY-12012	B76-10170 03	LEWIS-12743	B76-10489 03	M-FS-23343	B76-10493 03
LANGLEY-12015	B76-10215 06			M-FS-23348	B76-10608 09
LANGLEY-12016	B76-10216 06			M-FS-23349	B76-10256 07
LANGLEY-12022	B76-10209 05	M-FS-1457	B76-10264 08	M-FS-23351	B76-10221 06
LANGLEY-12029	B76-10400 06	M-FS-19153	B76-10080 06	M-FS-23354	B76-10132 08
LANGLEY-12043	B76-10444 01	M-FS-19232	B76-10206 04	M-FS-23355	B76-10072 04
LANGLEY-12044	B76-10436 09	M-FS-19235	B76-10262 08	M-FS-23357	B76-10063 04
LANGLEY-12045	B76-10488 03	M-FS-19242	B76-10284 08	M-FS-23358	B76-10129 08
LANGLEY-12053	B76-10411 07	M-FS-19259	B76-10030 03	M-FS-23360	B76-10282 08
LANGLEY-12057	B76-10528 04	M-FS-19260	B76-10552 06	M-FS-23362	B76-10172 03
LANGLEY-12059	B76-10398 06	M-FS-19268	B76-10580 08	M-FS-23364	B76-10021 02
LANGLEY-12062	B76-10399 06	M-FS-19282	B76-10576 07	M-FS-23366	B76-10219 06
LANGLEY-12090	B76-10451 01	M-FS-19292	B76-10546 06	M-FS-23367	B76-10159 01
LANGLEY-12104	B76-10512 03	M-FS-19298	B76-10360 04	M-FS-23370	B76-10014 01
LANGLEY-12121	B76-10566 06	M-FS-19349	B76-10145 01	M-FS-23374	B76-10248 07
LANGLEY-12123	B76-10491 03	M-FS-20607	B76-10592 08	M-FS-23378	B76-10545 06
LANGLEY-12132	B76-10588 08	M-FS-21163	B76-10574 07	M-FS-23395	B76-10148 01
LANGLEY-12134	B76-10570 07	M-FS-21221	B76-10077 05	M-FS-23396	B76-10500 03
LANGLEY-12135	B76-10571 07	M-FS-21309	B76-10575 07	M-FS-23397	B76-10173 03
LANGLEY-12140	B76-10529 04	M-FS-21496	B76-10079 06	M-FS-23399	B76-10185 03
		M-FS-21577	B76-10016 02	M-FS-23400	B76-10180 03
		M-FS-21632	B76-10122 07	M-FS-23403	B76-10254 07
		M-FS-21666	B76-10103 06	M-FS-23407	B76-10563 06
LEWIS-10130	B76-10408 07	M-FS-21931	B76-10137 01	M-FS-23408	B76-10139 01
LEWIS-10391	B76-10407 07	M-FS-21951	B76-10105 06	M-FS-23409	B76-10524 04
LEWIS-10513	B76-10130 08	M-FS-22040	B76-10039 03	M-FS-23410	B76-10149 01
LEWIS-10577	B76-10356 04	M-FS-22191	B76-10128 08	M-FS-23419	B76-10171 03
LEWIS-10719	B76-10095 06	M-FS-22208	B76-10055 03	M-FS-23420	B76-10196 04
LEWIS-11158	B76-10378 06	M-FS-22469	B76-10116 07	M-FS-23421	B76-10342 03
LEWIS-11305	B76-10084 06	M-FS-22588	B76-10044 03	M-FS-23423	B76-10174 03
LEWIS-12039	B76-10306 01	M-FS-22617	B76-10045 03	M-FS-23424	B76-10258 08
LEWIS-12076	B76-10088 06	M-FS-22707	B76-10114 07	M-FS-23428	B76-10253 07
LEWIS-12108	B76-10351 03	M-FS-22714	B76-10025 02	M-FS-23429	B76-10287 09
LEWIS-12119	B76-10081 06	M-FS-22739	B76-10271 08	M-FS-23431	B76-10318 01
LEWIS-12164	B76-10501 03	M-FS-22794	B76-10071 04	M-FS-23432	B76-10235 06
LEWIS-12166	B76-10505 03	M-FS-22800	B76-10263 08	M-FS-23437	B76-10429 08
LEWIS-12185	B76-10427 08	M-FS-22804	B76-10358 04	M-FS-23443	B76-10162 02
LEWIS-12220	B76-10070 04	M-FS-22809	B76-10121 07	M-FS-23449	B76-10437 09
LEWIS-12293	B76-10260 08	M-FS-22863	B76-10038 03	M-FS-23450	B76-10583 08
LEWIS-12297	B76-10138 01	M-FS-22867	B76-10288 09	M-FS-23451	B76-10144 01
LEWIS-12375	B76-10110 06	M-FS-22921	B76-10024 02	M-FS-23459	B76-10352 04
LEWIS-12423	B76-10394 06	M-FS-22923	B76-10049 03	M-FS-23461	B76-10495 03
LEWIS-12432	B76-10548 06	M-FS-22926	B76-10202 04	M-FS-23462	B76-10424 08
LEWIS-12444	B76-10410 07	M-FS-22989	B76-10091 06	M-FS-23505	B76-10450 01
LEWIS-12500	B76-10242 06	M-FS-22995	B76-10301 01	M-FS-23507	B76-10472 01
LEWIS-12505	B76-10134 09	M-FS-23006	B76-10283 08	M-FS-23509	B76-10422 08
LEWIS-12505	B76-10607 09	M-FS-23040	B76-10124 08	M-FS-23510	B76-10606 09
LEWIS-12506	B76-10108 06	M-FS-23075	B76-10050 03	M-FS-23512	B76-10560 06
LEWIS-12512	B76-10395 06	M-FS-23102	B76-10043 03	M-FS-23527	B76-10543 06
LEWIS-12521	B76-10115 07	M-FS-23104	B76-10343 03	M-FS-23537	B76-10469 01
LEWIS-12539	B76-10101 06	M-FS-23115	B76-10032 03	M-FS-23538	B76-10562 06
LEWIS-12540	B76-10607 09	M-FS-23121	B76-10155 01	M-FS-23539	B76-10604 09
LEWIS-12544	B76-10320 02	M-FS-23127	B76-10153 01	M-FS-23547	B76-10393 06
LEWIS-12555	B76-10438 09	M-FS-23128	B76-10007 01	M-FS-23565	B76-10549 06
LEWIS-12556	B76-10404 06	M-FS-23130	B76-10035 03	M-FS-24133	B76-10092 06
LEWIS-12557	B76-10554 06	M-FS-23141	B76-10154 01	M-FS-24183	B76-10001 01
LEWIS-12563	B76-10062 04	M-FS-23155	B76-10031 03	M-FS-24254	B76-10300 01
LEWIS-12564	B76-10061 04	M-FS-23160	B76-10037 03	M-FS-24280	B76-10157 01
LEWIS-12596	B76-10224 06	M-FS-23174	B76-10151 01	M-FS-24309	B76-10093 06
LEWIS-12597	B76-10020 02	M-FS-23182	B76-10399 06	M-FS-24336	B76-10086 06
LEWIS-12612	B76-10605 09	M-FS-23233	B76-10413 07	M-FS-24410	B76-10019 02
LEWIS-12614	B76-10047 03	M-FS-23262	B76-10004 01	M-FS-24454	B76-10272 08
LEWIS-12615	B76-10355 04	M-FS-23266	B76-10158 01	M-FS-223135	B76-10152 01
LEWIS-12632	B76-10547 06	M-FS-23270	B76-10141 01		

ORIGINATING CENTER/TECH BRIEF NUMBER INDEX

MSC-12279	876-10385 06	MSC-16125	876-10594 08	NPO-13256	876-10307 01
MSC-12466	876-10249 07	MSC-16136	876-10479 02	NPO-13272	876-10310 01
MSC-12474	876-10220 06	MSC-16148	876-10368 05	NPO-13302	876-10175 03
MSC-12618	876-10346 03	MSC-16159	876-10509 03	NPO-13396	876-10059 04
MSC-12648	876-10281 08	MSC-16170	876-10481 02	NPO-13413	876-10293 01
MSC-12687	876-10182 03	MSC-16186	876-10471 01	NPO-13416	876-10459 01
MSC-12709	876-10447 01	MSC-16214	876-10603 09	NPO-13449	876-10341 03
MSC-12712	876-10002 01	MSC-16220	876-10556 06	NPO-13461	876-10098 06
MSC-13805	876-10609 09	MSC-16221	876-10593 08	NPO-13474	876-10060 04
MSC-13975	876-10314 01	MSC-16268	876-10557 06	NPO-13488	876-10017 02
MSC-14026	876-10255 07	MSC-16331	876-10446 01	NPO-13510	876-10485 03
MSC-14056	876-10337 03	MSC-17094	876-10229 06	NPO-13528	876-10090 06
MSC-14058	876-10325 02	MSC-17472	876-10416 07	NPO-13541	876-10405 07
MSC-14287	876-10251 07	MSC-17473	876-10419 07	NPO-13545	876-10482 02
MSC-14304	876-10247 07	MSC-17494	876-10230 06	NPO-13569	876-10033 03
MSC-14365	876-10083 06	MSC-17780	876-10277 08	NPO-13578	876-10294 01
MSC-14412	876-10051 03	MSC-19103	876-10234 06	NPO-13592	876-10308 01
MSC-14620	876-10052 03	MSC-19132	876-10227 06	NPO-13600	876-10317 01
MSC-14623	876-10363 05	MSC-19217	876-10203 04	NPO-13605	876-10164 02
MSC-14642	876-10197 04	MSC-19279	876-10431 08	NPO-13616	876-10213 05
MSC-14654	876-10228 06	MSC-19313	876-10250 07	NPO-13640	876-10340 03
MSC-14655	876-10581 08	MSC-19322	876-10265 08	NPO-13641	876-10463 01
MSC-14669	876-10066 04	MSC-19323	876-10127 08	NPO-13642	876-10147 01
MSC-14683	876-10026 02	MSC-19380	876-10267 08	NPO-13644	876-10075 05
MSC-14713	876-10389 06	MSC-19382	876-10532 05	NPO-13655	876-10167 02
MSC-14733	876-10208 05	MSC-19455	876-10311 01	NPO-13659	876-10316 01
MSC-14756	876-10119 07	MSC-19456	876-10312 01	NPO-13663	876-10183 03
MSC-14757	876-10415 07	MSC-19469	876-10133 09	NPO-13687	876-10502 03
MSC-14795	876-10195 04	MSC-19473	876-10585 08	NPO-13692	876-10303 01
MSC-14798	876-10326 02	MSC-19480	876-10146 01	NPO-13701	876-10324 02
MSC-14805	876-10366 05	MSC-19488	876-10270 08	NPO-13707	876-10123 08
MSC-14814	876-10452 01	MSC-19491	876-10150 01	NPO-13716	876-10602 09
MSC-14831	876-10354 04	MSC-19502	876-10401 06	NPO-13718	876-10510 03
MSC-14836	876-10207 05	MSC-19522	876-10595 08	NPO-13723	876-10329 02
MSC-14840	876-10161 02	MSC-19535	876-10252 07	NPO-13726	876-10218 06
MSC-14842	876-10319 02	MSC-19536	876-10418 07	NPO-13727	876-10163 02
MSC-14844	876-10027 02	MSC-19560	876-10428 08	NPO-13737	876-10468 01
MSC-14853	876-10113 06	MSC-19568	876-10371 06	NPO-13743	876-10210 05
MSC-14854	876-10106 06	MSC-19600	876-10280 08	NPO-13745	876-10439 01
MSC-14855	876-10480 02	MSC-19621	876-10109 06	NPO-13755	876-10470 01
MSC-14862	876-10527 04	MSC-19632	876-10104 06	NPO-13756	876-10334 03
MSC-14900	876-10140 01	MSC-19634	876-10414 07	NPO-13757	876-10445 01
MSC-14905	876-10214 06	MSC-19641	876-10421 08	NPO-13759	876-10494 03
MSC-14906	876-10068 04	MSC-19642	876-10269 08	NPO-13764	876-10211 05
MSC-14907	876-10453 01	MSC-19644	876-10564 06	NPO-13792	876-10473 02
MSC-14920	876-10330 02	MSC-19666	876-10589 08	NPO-13794	876-10376 06
MSC-14933	876-10321 02	MSC-19670	876-10553 06	NPO-13796	876-10169 03
MSC-14936	876-10212 05	MSC-19690	876-10587 08	NPO-13798	876-10487 03
MSC-14937	876-10292 01	MSC-19693	876-10579 08	NPO-13802	876-10423 08
MSC-14964	876-10236 06	MSC-19713	876-10276 08	NPO-13811	876-10499 03
MSC-14965	876-10474 02	MSC-19728	876-10268 08	NPO-13813	876-10486 03
MSC-14966	876-10430 09	MSC-19778	876-10425 08	NPO-13827	876-10519 04
MSC-14967	876-10457 01			NPO-13834	876-10136 09
MSC-14969	876-10331 03	NPO-11607	876-10192 04	NPO-13847	876-10514 04
MSC-14979	876-10600 09	NPO-11644	876-10135 09	NPO-13863	876-10478 02
MSC-14983	876-10266 08	NPO-11821	876-10296 01	NPO-13866	876-10464 01
MSC-14989	876-10456 01	NPO-11831	876-10297 01	NPO-13877	876-10516 04
MSC-14995	876-10336 03	NPO-11832	876-10298 01	NPO-13904	876-10517 04
MSC-14996	876-10353 04	NPO-11833	876-10299 01	NPO-13922	876-10540 05
MSC-15817	876-10245 07	NPO-11868	876-10011 01	NPO-14002	876-10507 03
MSC-15985	876-10069 04	NPO-11912	876-10054 03	NPO-14017	876-10599 09
MSC-16000	876-10420 07	NPO-11932	876-10041 03		
MSC-16009	876-10344 03	NPO-11935	876-10193 04		
MSC-16010	876-10191 04	NPO-11937	876-10010 01		
MSC-16011	876-10369 05	NPO-11940	876-10082 06		
MSC-16012	876-10426 08	NPO-13060	876-10302 01		
MSC-16018	876-10391 06	NPO-13062	876-10046 03		
MSC-16022	876-10361 04	NPO-13068	876-10198 04		
MSC-16026	876-10383 06	NPO-13079	876-10449 01		
MSC-16039	876-10390 06	NPO-13081	876-10315 01		
MSC-16046	876-10531 05	NPO-13083	876-10199 04		
MSC-16062	876-10530 05	NPO-13093	876-10465 01		
MSC-16078	876-10357 04	NPO-13107	876-10313 01		
MSC-16085	876-10497 03	NPO-13111	876-10200 04		
MSC-16089	876-10523 04	NPO-13158	876-10578 07		
MSC-16096	876-10370 05	NPO-13230	876-10309 01		
MSC-16100	876-10462 01	NPO-13243	876-10029 02		
MSC-16111	876-10364 05				

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TECH BRIEF/ORIGINATING CENTER NUMBER INDEX

Index to NASA Tech Briefs

Issue 17

Tech Brief/Originating Center Number Index

The left hand column identifies the Tech Brief number, e.g. B76-10001 followed by a two-digit number e.g. 01 which identifies the subject category containing the entire citation. Following the subject category number is the originating Center number.

B76-10001 01	M-FS-24183	B76-10045 03	M-FS-22617	B76-10110 06	LEWIS-12375
B76-10002 01	MSC-12712	B76-10046 03	NPO-13062	B76-10111 06	LANGLEY-11696
B76-10003 01	HQN-10871	B76-10047 03	LEWIS-12614	B76-10112 06	LANGLEY-11701
B76-10004 01	M-FS-23262	B76-10048 03	M-FS-23325	B76-10113 06	MSC-14853
B76-10005 01	HQN-10799	B76-10049 03	M-FS-22923	B76-10114 07	M-FS-22707
B76-10006 01	LANGLEY-11755	B76-10050 03	M-FS-23075	B76-10115 07	LEWIS-12521
B76-10007 01	M-FS-23128	B76-10051 03	MSC-14412	B76-10116 07	M-FS-22469
B76-10008 01	LANGLEY-11720	B76-10052 03	MSC-14620	B76-10117 07	GSFC-11883
B76-10009 01	LANGLEY-11319	B76-10053 03	M-FS-23324		GSFC-11974
B76-10010 01	NPO-11937	B76-10054 03	NPO-11912		GSFC-11975
B76-10011 01	NPO-11868	B76-10055 03	M-FS-22208		KSC-10596
B76-10012 01	M-FS-23274	B76-10056 03	HQN-10876	B76-10118 07	MSC-14756
B76-10013 01	M-FS-23308	B76-10057 03	LANGLEY-11873	B76-10119 07	LANGLEY-11941
B76-10014 01	M-FS-23370	B76-10058 04	LANGLEY-11843	B76-10120 07	M-FS-22809
B76-10015 01	M-FS-23287	B76-10059 04	NPO-13396	B76-10121 07	M-FS-21632
B76-10016 02	M-FS-21577	B76-10060 04	NPO-13474	B76-10122 07	NPO-13707
B76-10017 02	NPO-13488	B76-10061 04	LEWIS-12564	B76-10123 08	M-FS-23040
B76-10018 02	LEWIS-12638	B76-10062 04	LEWIS-12563	B76-10124 08	GSFC-11941
B76-10019 02	M-FS-24410	B76-10063 04	M-FS-23357	B76-10125 08	KSC-10667
B76-10020 02	LEWIS-12597	B76-10064 04	GSFC-10954	B76-10126 08	MSC-19323
B76-10021 02	M-FS-23364	B76-10065 04	ARC-11008	B76-10127 08	M-FS-22191
B76-10022 02	GSFC-11943	B76-10066 04	MSC-14669	B76-10128 08	M-FS-23358
B76-10023 02	GSFC-11912	B76-10067 04	LANGLEY-11150	B76-10129 08	LEWIS-10513
B76-10024 02	M-FS-22921	B76-10068 04	MSC-14906	B76-10130 08	GSFC-10984
B76-10025 02	M-FS-22714	B76-10069 04	MSC-15985	B76-10131 08	M-FS-23354
B76-10026 02	MSC-14683	B76-10070 04	LEWIS-12220	B76-10132 08	MSC-19469
B76-10027 02	MSC-14844	B76-10071 04	M-FS-22794	B76-10133 09	LEWIS-12505
B76-10028 02	HQN-10880	B76-10072 04	M-FS-23355	B76-10134 09	NPO-11644
B76-10029 02	NPO-13243	B76-10073 05	GSFC-12003	B76-10135 09	NPO-13834
B76-10030 03	M-FS-19259	B76-10074 05	LANGLEY-11975	B76-10136 09	M-FS-21931
B76-10031 03	M-FS-23155	B76-10075 05	NPO-13644	B76-10137 01	LEWIS-12297
B76-10032 03	M-FS-23115	B76-10076 05	LANGLEY-11918	B76-10138 01	M-FS-23408
B76-10033 03	NPO-13569	B76-10077 05	M-FS-21221	B76-10139 01	MSC-14900
B76-10034 03	GSFC-11887	B76-10078 05	LANGLEY-11802	B76-10140 01	M-FS-23270
B76-10035 03	M-FS-23130	B76-10079 06	M-FS-21496	B76-10141 01	GSFC-11785
B76-10036 03	LANGLEY-11625	B76-10080 06	M-FS-19153	B76-10142 01	GSFC-11696
B76-10037 03	M-FS-23160	B76-10081 06	LEWIS-12119	B76-10143 01	M-FS-23451
B76-10038 03	M-FS-22863	B76-10082 06	NPO-11940	B76-10144 01	M-FS-19349
B76-10039 03	M-FS-22040	B76-10083 06	MSC-14365	B76-10145 01	MSC-19480
B76-10040 03	GSFC-11890	B76-10084 06	LEWIS-11305	B76-10146 01	NPO-13642
B76-10041 03	NPO-11932	B76-10085 06	GSFC-10969	B76-10147 01	M-FS-23395
B76-10042 03	GSFC-12034	B76-10086 06	M-FS-24336	B76-10148 01	M-FS-23410
B76-10043 03	M-FS-23102	B76-10087 06	LANGLEY-12003	B76-10149 01	MSC-19491
B76-10044 03	M-FS-22588	B76-10088 06	LEWIS-12076	B76-10150 01	M-FS-23174
		B76-10089 06	HQN-10748	B76-10151 01	M-FS-223135
		B76-10090 06	NPO-13528	B76-10152 01	M-FS-23127
		B76-10091 06	M-FS-22989	B76-10153 01	M-FS-23141
		B76-10092 06	M-FS-24133	B76-10154 01	M-FS-23121
		B76-10093 06	M-FS-24309	B76-10155 01	HQN-10894
		B76-10094 06	LANGLEY-11082	B76-10156 01	M-FS-24280
		B76-10095 06	LEWIS-10719	B76-10157 01	M-FS-23266
		B76-10096 06	ARC-10959	B76-10158 01	M-FS-23367
		B76-10097 06	LANGLEY-11380	B76-10159 01	ARC-10993
		B76-10098 06	NPO-13461	B76-10160 02	MSC-14840
		B76-10099 06	LANGLEY-11413	B76-10161 02	M-FS-23443
		B76-10100 06	M-FS-23286	B76-10162 02	NPO-13727
		B76-10101 06	LEWIS-12539	B76-10163 02	NPO-13605
		B76-10102 06	KSC-10538	B76-10164 02	GSFC-11918
		B76-10103 06	M-FS-21666	B76-10165 02	M-FS-23322
		B76-10104 06	MSC-19632	B76-10166 02	NPO-13655
		B76-10105 06	M-FS-21951	B76-10167 02	ARC-10808
		B76-10106 06	MSC-14854	B76-10168 02	NPO-13796
		B76-10107 06	GSFC-11468	B76-10170 03	LANGLEY-12012
		B76-10108 06	LEWIS-12506	B76-10171 03	M-FS-23419
		B76-10109 06	MSC-19621	B76-10172 03	M-FS-23362

TECH BRIEF/ORIGINATING CENTER NUMBER INDEX

876-10173 03	M-FS-23397	876-10250 07	MSC-19313	876-10327 02	LANGLEY-11922
876-10174 03	M-FS-23423	876-10251 07	MSC-14287	876-10328 02	KSC-11027
876-10175 03	NPO-13302	876-10252 07	MSC-19535	876-10329 02	NPO-13723
876-10176 03	LANGLEY-11477	876-10253 07	M-FS-23428	876-10330 02	MSC-14920
876-10177 03	GSFC-12083	876-10254 07	M-FS-23403	876-10331 03	MSC-14969
876-10178 03	ARC-10932	876-10255 07	MSC-14026	876-10332 03	GSFC-12088
876-10179 03	LANGLEY-11392	876-10256 07	M-FS-23349	876-10333 03	GSFC-12120
876-10180 03	M-FS-23400	876-10257 07	HQN-10892	876-10334 03	NPO-13756
876-10181 03	GSFC-11989	876-10258 08	M-FS-23424	876-10335 03	GSFC-11571
876-10182 03	MSC-12687	876-10259 08	M-FS-23312	876-10336 03	MSC-14995
876-10183 03	NPO-13663	876-10260 08	LEWIS-12293	876-10337 03	MSC-14056
876-10184 03	GSFC-12114	876-10261 08	GSFC-11826	876-10338 03	LANGLEY-11869
876-10185 03	M-FS-23399	876-10262 08	M-FS-19235	876-10339 03	ARC-10811
876-10186 03	HQN-10900	876-10263 08	M-FS-22800	876-10340 03	NPO-13640
876-10187 03	HQN-10893	876-10264 08	M-FS-1457	876-10341 03	NPO-13449
876-10188 03	HQN-10891	876-10265 08	MSC-19322	876-10342 03	M-FS-23421
876-10189 03	HQN-10898	876-10266 08	MSC-14983	876-10343 03	M-FS-23104
876-10190 03	GSFC-12099	876-10267 08	MSC-19380	876-10344 03	MSC-16009
876-10191 04	MSC-16010	876-10268 08	MSC-19728	876-10345 03	ARC-10947
876-10192 04	NPO-11607	876-10269 08	MSC-19642	876-10346 03	MSC-12618
876-10193 04	NPO-11935	876-10270 08	MSC-19488	876-10347 03	M-FS-23288
876-10194 04	ARC-10996	876-10271 08	M-FS-22739	876-10348 03	GSFC-12131
876-10195 04	MSC-14795	876-10272 08	M-FS-24454	876-10349 03	GSFC-12153
876-10196 04	M-FS-23420	876-10273 08	LANGLEY-11180	876-10350 03	LEWIS-12643
876-10197 04	MSC-14642	876-10274 08	LANGLEY-11444	876-10351 03	LEWIS-12108
876-10198 04	NPO-13068	876-10275 08	KSC-10689	876-10352 04	M-FS-23459
876-10199 04	NPO-13083	876-10276 08	MSC-19713	876-10353 04	MSC-14996
876-10200 04	NPO-13111	876-10277 08	MSC-17780	876-10354 04	MSC-14831
876-10201 04	ARC-10915	876-10278 08	GSFC-12077	876-10355 04	LEWIS-12615
876-10202 04	M-FS-22926	876-10279 08	ARC-10946	876-10356 04	LEWIS-10577
876-10203 04	MSC-19217	876-10280 08	MSC-19600	876-10357 04	MSC-16078
876-10204 04	LANGLEY-11921	876-10281 08	MSC-12648	876-10358 04	M-FS-22804
876-10205 04	ARC-10890	876-10282 08	M-FS-23360	876-10359 04	LEWIS-12738
876-10206 04	M-FS-19232	876-10283 08	M-FS-23006	876-10360 04	M-FS-19298
876-10207 05	MSC-14836	876-10284 08	M-FS-19242	876-10361 04	MSC-16022
876-10208 05	MSC-14733	876-10285 09	FRC-10108	876-10362 05	ARC-10956
876-10209 05	LANGLEY-12022	876-10286 09	M-FS-23340	876-10363 05	MSC-14623
876-10210 05	NPO-13743	876-10287 09	M-FS-23429	876-10364 05	MSC-16111
876-10211 05	NPO-13764	876-10288 09	M-FS-22867	876-10365 05	LANGLEY-11973
876-10212 05	MSC-14936	876-10289 09	HQN-10834	876-10366 05	MSC-14805
876-10213 05	NPO-13616	876-10290 01	GSFC-12047	876-10367 05	ARC-10898
876-10214 06	MSC-14905	876-10291 01	GSFC-12018	876-10368 05	MSC-16148
876-10215 06	LANGLEY-12015	876-10292 01	MSC-14937	876-10369 05	MSC-16011
876-10216 06	LANGLEY-12016	876-10293 01	NPO-13413	876-10370 05	MSC-16096
876-10217 06	M-FS-23338	876-10294 01	NPO-13578	876-10371 06	MSC-19568
876-10218 06	NPO-13726	876-10295 01	M-FS-23303	876-10372 06	LEWIS-12642
876-10219 06	M-FS-23366	876-10296 01	NPO-11821	876-10373 06	ARC-10905
876-10220 06	MSC-12474	876-10297 01	NPO-11831	876-10374 06	ARC-10896
876-10221 06	M-FS-23351	876-10298 01	NPO-11832	876-10375 06	ARC-10812
876-10222 06	ARC-10900	876-10299 01	NPO-11833	876-10376 06	NPO-13794
876-10223 06	ARC-10997	876-10300 01	M-FS-24254	876-10377 06	KSC-10741
876-10224 06	LEWIS-12596	876-10301 01	M-FS-22995	876-10378 06	LEWIS-11158
876-10225 06	M-FS-23315	876-10302 01	NPO-13060	876-10379 06	ARC-10911
876-10226 06	LEWIS-12686	876-10303 01	NPO-13692	876-10380 06	LANGLEY-11785
876-10227 06	MSC-19132	876-10304 01	KSC-10651	876-10381 06	ARC-10639
876-10228 06	MSC-14654	876-10305 01	LANGLEY-11709	876-10382 06	KSC-11037
876-10229 06	MSC-17094	876-10306 01	LEWIS-12039	876-10383 06	MSC-16026
876-10230 06	MSC-17494	876-10307 01	NPO-13256	876-10384 06	ARC-10912
876-10231 06	LANGLEY-11871	876-10308 01	NPO-13592	876-10385 06	MSC-12279
876-10232 06	HQN-10890	876-10309 01	NPO-13230	876-10386 06	ARC-10897
876-10233 06	HQN-10901	876-10310 01	NPO-13272	876-10387 06	GSFC-12037
876-10234 06	MSC-19103	876-10311 01	MSC-19455	876-10388 06	KSC-10740
876-10235 06	M-FS-23432	876-10312 01	MSC-19456	876-10389 06	MSC-14713
876-10236 06	MSC-14964	876-10313 01	NPO-13107	876-10390 06	MSC-16039
876-10237 06	LEWIS-12636	876-10314 01	MSC-13975	876-10391 06	MSC-16018
876-10238 06	HQN-10899	876-10315 01	NPO-13081	876-10392 06	LEWIS-12683
876-10239 06	LANGLEY-11888	876-10316 01	NPO-13659	876-10393 06	M-FS-23547
876-10240 06	LANGLEY-11497	876-10317 01	NPO-13600	876-10394 06	LEWIS-12423
876-10241 06	LANGLEY-11480	876-10318 01	M-FS-23431	876-10395 06	LEWIS-12512
876-10242 06	LEWIS-12500	876-10319 02	MSC-14842	876-10396 06	GSFC-12014
876-10243 06	M-FS-23320	876-10320 02	LEWIS-12544	876-10397 06	LANGLEY-11783
876-10244 07	LANGLEY-10944	876-10321 02	MSC-14933	876-10398 06	LANGLEY-12059
876-10245 07	MSC-15817	876-10322 02	GSFC-12044	876-10399 06	LANGLEY-12062
876-10246 07	LANGLEY-11982	876-10323 02	GSFC-12017		M-FS-23182
876-10247 07	MSC-14304	876-10324 02	NPO-13701	876-10400 06	LANGLEY-12029
876-10248 07	M-FS-23374	876-10325 02	MSC-14058	876-10401 06	MSC-19502
876-10249 07	MSC-12466	876-10326 02	MSC-14798	876-10402 06	FRC-10109

TECH BRIEF/ORIGINATING CENTER NUMBER INDEX

876-10403 06	ARC-10790	876-10480 02	MSC-14855	876-10557 06	MSC-16268
876-10404 06	LEWIS-12556	876-10481 02	MSC-16170	876-10558 06	LEWIS-12710
876-10405 07	NPO-13541	876-10482 02	NPO-13545	876-10559 06	M-FS-23335
876-10406 07	KSC-11026	876-10483 02	FRC-10110	876-10560 06	M-FS-23512
876-10407 07	LEWIS-10391	876-10484 02	LEWIS-12687	876-10561 06	LEWIS-12684
876-10408 07	LEWIS-10130	876-10485 03	NPO-13510	876-10562 06	M-FS-23538
876-10409 07	KSC-11041	876-10486 03	NPO-13813	876-10563 06	M-FS-23407
876-10410 07	LEWIS-12444	876-10487 03	NPO-13798	876-10564 06	MSC-19644
876-10411 07	LANGLEY-12053	876-10488 03	LANGLEY-12045	876-10565 06	LANGLEY-11047
876-10412 07	GSFC-11960	876-10489 03	LEWIS-12743	876-10566 06	LANGLEY-12121
876-10413 07	M-FS-23233	876-10490 03	GSFC-11976	876-10567 06	ARC-10969
876-10414 07	MSC-19634	876-10491 03	LANGLEY-12123	876-10568 06	ARC-11086
876-10415 07	MSC-14757	876-10492 03	ARC-11032	876-10569 06	GSFC-11923
876-10416 07	MSC-17472	876-10493 03	M-FS-23343	876-10570 07	LANGLEY-12134
876-10417 07	ARC-10884	876-10494 03	NPO-13759	876-10571 07	LANGLEY-12135
876-10418 07	MSC-19536	876-10495 03	M-FS-23461	876-10572 07	ARC-10981
876-10419 07	MSC-17473	876-10496 03	GSFC-11992	876-10573 07	ARC-10941
876-10420 07	MSC-16000	876-10497 03	MSC-16085	876-10574 07	M-FS-21163
876-10421 08	MSC-19641	876-10498 03	GSFC-12110	876-10575 07	M-FS-21309
876-10422 08	M-FS-23509	876-10499 03	NPO-13811	876-10576 07	M-FS-19282
876-10423 08	NPO-13802	876-10500 03	M-FS-23396	876-10577 07	GSFC-12056
876-10424 08	M-FS-23462	876-10501 03	LEWIS-12164	876-10578 07	NPO-13158
876-10425 08	MSC-19778	876-10502 03	NPO-13687	876-10579 08	MSC-19693
876-10426 08	MSC-16012	876-10503 03	LANGLEY-11355	876-10580 08	M-FS-19268
876-10427 08	LEWIS-12185	876-10504 03	GSFC-11935	876-10581 08	MSC-14655
876-10428 08	MSC-19560	876-10505 03	LEWIS-12166	876-10582 08	LANGLEY-11940
876-10429 08	M-FS-23437	876-10506 03	GSFC-12010	876-10583 08	M-FS-23450
876-10430 09	MSC-14966	876-10507 03	NPO-14002	876-10584 08	LEWIS-12676
876-10431 08	MSC-19279	876-10508 03	GSFC-12135	876-10585 08	MSC-19473
876-10432 08	GSFC-12105	876-10509 03	MSC-16159	876-10586 08	LANGLEY-11739
876-10433 08	KSC-11043	876-10510 03	NPO-13718	876-10587 08	MSC-19690
876-10434 09	LANGLEY-11391	876-10511 03	GSFC-12098	876-10588 08	LANGLEY-12132
876-10435 09	KSC-11040	876-10512 03	LANGLEY-12104	876-10589 08	MSC-19666
876-10436 09	LANGLEY-12044	876-10513 03	GSFC-12156	876-10590 08	ARC-10976
876-10437 09	M-FS-23449	876-10514 04	NPO-13847	876-10591 08	ARC-10983
876-10438 09	LEWIS-12555	876-10515 04	ARC-11064	876-10592 08	M-FS-20607
876-10439 01	NPO-13745	876-10516 04	NPO-13877	876-10593 08	MSC-16221
876-10440 01	LANGLEY-11317	876-10517 04	NPO-13904	876-10594 08	MSC-16125
876-10441 01	LANGLEY-11906	876-10518 04	ARC-10980	876-10595 08	MSC-19522
876-10442 01	LANGLEY-11997	876-10519 04	NPO-13827	876-10596 08	GSFC-12186
876-10443 01	LANGLEY-11862	876-10520 04	LEWIS-12633	876-10597 09	HQN-10910
876-10444 01	LANGLEY-12043	876-10521 04	KSC-11022	876-10598 09	LEWIS-12742
876-10445 01	NPO-13757	876-10522 04	LANGLEY-11823	876-10599 09	NPO-14017
876-10446 01	MSC-16331	876-10523 04	MSC-16089	876-10600 09	MSC-14979
876-10447 01	MSC-12709	876-10524 04	M-FS-23049	876-10601 09	LANGLEY-11877
876-10448 01	LANGLEY-11546	876-10525 04	ARC-11089	876-10602 09	NPO-13716
876-10449 01	NPO-13079	876-10526 04	ARC-11093	876-10603 09	MSC-16214
876-10450 01	M-FS-23505	876-10527 04	MSC-14862	876-10604 09	M-FS-23539
876-10451 01	LANGLEY-12090	876-10528 04	LANGLEY-12057	876-10605 09	LEWIS-12612
876-10452 01	MSC-14814	876-10529 04	LANGLEY-12140	876-10606 09	M-FS-23510
876-10453 01	MSC-14907	876-10530 05	MSC-16062	876-10607 09	LEWIS-12505
876-10454 01	KSC-11025	876-10531 05	MSC-16046		LEWIS-12540
876-10455 01	GSFC-12113	876-10532 05	MSC-19382	876-10608 09	M-FS-23348
876-10456 01	MSC-14989	876-10533 05	ARC-11007	876-10609 09	MSC-13805
876-10457 01	MSC-14967	876-10534 05	ARC-10633	876-10610 09	GSFC-12132
876-10458 01	LANGLEY-11316	876-10535 05	ARC-11074		
876-10459 01	NPO-13416	876-10536 05	GSFC-10246		
876-10460 01	ARC-11061	876-10537 05	ARC-10994		
876-10461 01	LANGLEY-11691	876-10538 05	ARC-10991		
876-10462 01	MSC-16100	876-10539 05	KSC-11011		
876-10463 01	NPO-13641	876-10540 05	NPO-13922		
876-10464 01	NPO-13866	876-10541 05	ARC-10916		
876-10465 01	NPO-13093	876-10542 06	LEWIS-12661		
876-10466 01	HQN-10827	876-10543 06	M-FS-23527		
876-10467 01	GSFC-11789	876-10544 06	LEWIS-12695		
876-10468 01	NPO-13737	876-10545 06	M-FS-23378		
876-10469 01	M-FS-23537	876-10546 06	M-FS-19292		
876-10470 01	NPO-13755	876-10547 06	LEWIS-12632		
876-10471 01	MSC-16186	876-10548 06	LEWIS-12432		
876-10472 01	M-FS-23507	876-10549 06	M-FS-23565		
876-10473 02	NPO-13792	876-10550 06	LANGLEY-11659		
876-10474 02	MSC-14965	876-10551 06	LANGLEY-11988		
876-10475 02	ARC-10885	876-10552 06	M-FS-19260		
876-10476 02	GSFC-11880	876-10553 06	MSC-19670		
876-10477 02	ARC-10903	876-10554 06	LEWIS-12557		
876-10478 02	NPO-13863	876-10555 06	LANGLEY-11999		
876-10479 02	MSC-16136	876-10556 06	MSC-16220		

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